Hugh Cecil Earl of Lonsdale.

1854.

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257

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CONTAINING THE

Causes, Symptoms, and most approved Methods of Cure,

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BY FRANCIS CLATER,

AUTHOR OF "EVERY MAN HIS OWN CATTLE DOCTOR."

AND HIS SON,

JOHN CLATER.

The Thirtieth Edition,

EDITED AND CAREFULLY CORRECTED

BY EDWARD MAYHEW,

MEMBER OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

LONDON:

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ADVERTISEMENT

TO THE

THIRTIETH EDITION.

THE public favour bestowed upon this Work having in no way diminished, the Proprietors, to continue it, that which it now undoubtedly is, the most popular of all those works which treat of the Diseases of the Horse and Dog, have had the book thoroughly revised by a gentleman of known professional ability. Under his direction several very important changes have been introduced. Whole chapters of exploded conjecture have been expunged; and various others, containing really solid information, have been added. The portion which is devoted to the Diseases of the Horse has been almost re-written, and nothing practically valuable has been omitted, while all mere speculative novelties have been discarded.

To that part which treats of the Diseases of Dogs little material has been done. This originally was written by the late Mr. Youatt, and as it contains the most condensed, perhaps the best, exposition extant of his system of treating the ailments of the canine race, the Editor was of opinion that, until other modes of practice were firmly established, it had better remain in its integrity.

April, 1854.

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INTRODUCTION.

THE ANATOMY AND PHYSIOLOGY

OF

THE HORSE.

In order to preserve a uniformity between the present work and that on "Cattle," this will commence with a short sketch of the structure and proper form of the Horse, as adapted to the various purposes to which his strength and speed are devoted: but, to avoid all tedious repetition, the introduction to the former work will be referred to for a description of general anatomy, or the structure and uses of bone, muscle, membrane, &c.; also for the functions of the different organs, as the heart, the stomach, and the lungs; including a history of the processes of circulation, respiration, digestion, &c.; and all those particular processes which are peculiar to the horse.

A naturalist would say that the proper characteristics of this noble animal are, six cutting or fore teeth in the upper and in the under jaw; two tushes in the upper and two in the under jaw; a space between the tushes and the molar-teeth or grinders; and six grinders upon each side of either jaw with several ridges of enamel running down the body of the teeth. The eyes are

large; the ears erect; the upper lip capable of more motion than is usual in herbivorous animals: the foot having but a single toe, and that enveloped with thick horn or a hoof; the tail covered with long hair; two teats; one stomach, but the lining of it composed of two membranes; the stomach small, and the intestines proportionably large.

The Head.—The head of the horse should not be too large, for that usually makes the saddle-horse heavy on the hand. A head small in proportion to the size of the horse is a fair proof that he has some Eastern blood in him, and is not devoid of spirit. Occasionally the horse with a small head is vicious, and the shape therefore is of equal importance with the size of the part. A head, being of a fair proportion to the general make, and the bulk consisting in breadth of forehead rather than length of face—the eye likewise being a little prominent and lively—these peculiarities will in most cases indicate the manageable and serviceable horse. The breadth of the forehead, and the shortness of the face, should be particularly regarded and sought after for general and light, yet lasting work; but the narrow forehead and long face may do well in the quiet strong horse of heavy work. For common purposes, a horse with a sinking or hollow across the nose, a little below the eyes, should seldom be chosen; it too often tells of ill temper, especially if joined with a more than usual display of the white of the eye. The line of the face should be nearly straight, yet a little prominence will generally characterise the good-tempered, good-feeding, strong, lasting, manageable, but not very light or speedy horse.

The Setting-on of the Head.—There are few things more connected with the comfortable use of the horse than this. A great deal of the pleasure of riding and of driving depends on the manner in which a horse carries his head. It must form a certain curve with the neck, so as to play easily, or the mouth cannot be light and pleasant. A horse boring with his nose before him will tire any arms, and will always be unsafe.

The Lips.—If we take the parts of the face individually, the lips are of more importance than is generally imagined. A firm and compressed lip is a pretty sure pledge that the muscles everywhere have considerable power. A horse, with his lips flabby and hanging down is sure to be diseased or sluggish, or old. The sense of touch resides in the horse's lips, and, if they are pendulant, the energy is weakened; and this loss of feeling will interfere with that delicacy on which the easy management of the animal so much depends.

The Nostrils.—So far as speed and spirit are concerned, the form of the nostrils is of considerable moment. The horse breathes through his nostrils; and therefore, if all the air that is to supply the lungs must enter at the nose, a large nostril is indispensable. The capacities of an animal must control the purposes to which mankind put him; and if a horse has much speed and endurance, a large nostril generally gives notice of his innate properties. The dimensions of this part is the main difference between the blood and the country horse. A brisk trot of a few minutes' duration will leave no doubt about the expansibility of the horse's nostril. The thinness of the skin of the nostril is another indispensable accompaniment of speed and wind.

The nostril of the cart-horse, with its thick skin, cannot possibly expand to the extent which a blood horse requires when at full speed.

The False Nostril.—There is a curious formation of the nostril in the equine race which we do not observe in other animals. The whole of the external opening does not conduct to the cavity of the nose, but on the outer side there is a blind pouch, called the false nostril, which is formed of a doubling of the skin. The interior of this false nostril is lined by a soft membrane, not so moist or delicate as that within the true nostril, but more so than that upon the exterior of the lips. The use of these cavities is to admit of that distention which the habits of the horse necessitate. In the quiescent state, they permit of the openings being diminished, without destroying the symmetry of the face, and, being muscular, they, by their expansion, remove the atmospheric pressure from the true nostril, when the passage of a greater quantity of air is required. They permit the perfect adaptation of the parts, without interfering with that beauty of form which Nature, in all her works, studies to preserve. In smell they are not concerned, but in voice, neighing, &c., they are employed, giving character and strength to the sounds emitted.

The Cartilaginous Division of the Nostrils.—A piece of cartilage runs up the centre of the nose, dividing it into two cavities. There is, concerning this cartilaginous septum, or dividing wall, one circumstance which deserves remark. From the more flexible nature of the nostril, more of the membrane that covers it is seen in the horse than in the ox; and the practitioner avails himself of this circumstance, in order to judge of the

existence and character of inflammations of the chest. The membrane covering this cartilaginous wall, is a continuation of that which lines the windpipe and lungs; therefore, by its redness or its paleness, it denotes the condition of the deeper-seated structures.

The Eye.—No horseman needs to be told how much and how rightly he judges of the horse by the appearance and expression of the eye. The countenance of the human being is not a surer guide to the temper of a man than is the eye to that of the horse. We always like to see a large eye in the horse, and one a little prominent. The character of the eye is likewise to be observed. If the eyelids swell or project over it, and give it a sunken appearance, there has been inflammation. If one eye is somewhat larger than the other, inflammation has existed. This, however, will be discussed more fully in its proper place, when other matters concerning the eye will also be mentioned.

The Zygomatic Arch.—Near the eye is a projection of bone, little of which is seen in the ox. It is particularly brought under observation by the difficulty with which a collar a little too small is passed over the head. It is designed to give both strength and security: strength by affording attachment to the more important and larger of the muscles of mastication; and security by guarding the joint which the lower jaw forms with the other portion of the head.

The Frontal Sinuses.—In the ox there is a continuation of cells under the forehead, and between the outer and inner plates of the skull, running from the end of the nose to the very top of the horn. In the horse these cells, which are termed sinuses, extend

but a little way up the forehead; and behind them, a complicated plate of bone defends the brain.

The Ears.—As it regards the beauty, temper, and spirit, considerable attention is deservedly paid to the ear. It should be small, erect, and quick in motion. A large and lop ear is a sad blemish; and generally tells tales both as to the breeding of the horse and his degree of activity. Some people have endeavoured to remedy this by cropping the ears; and it was once the fashion to crop all horses, whether the ears were large or small. It was a barbarous practice: it gave an unnatural appearance and false character to the horse; it interfered materially with the hearing, for the vibrations of sound could not be so numerously and perfectly collected: it sometimes produced inflammation that led on to perfect deafness; and many a horse became permanently shy and vicious, from the soreness of his ears caused by cropping.

The inside of the ear is lined with soft hair. It was placed there to keep out the insects. The groom, however, finds great fault with it, and often cuts it out with his scissors, or singes it with his candle; and if he does not sometimes make very troublesome sores, and render the horse difficult to halter, he will at least expose him to annoyances from which nature had defended him.

The Tongue.—There are some peculiarities in the mouth of the horse with which horsemen should be acquainted. The tongue is considerably shorter than that of the ox, and is tied down by a fold of membrane or bridle. The horse does not, like the ox, gather its food with the tongue; neither does the sense of touch

reside in the tongue of the animal, therefore, the reason for the difference is perceived.

The Bars.—The palate is divided into numerous transverse ridges, called *bars*. They are duplicatures of the membrane of the palate, and contain a condensed tissue which is highly vascular. They are arranged in different directions; one half, which are placed forward, looking towards the throat; the others face the mouth; consequently, they retain upon the tongue any portion of the food that has been perfectly masticated: until, at the will of the animal, the muscles of deglutition are called into action, there can be no danger of the morsel passing onwards towards the windpipe, or chance of its falling from the mouth.

The Soft Palate.—The horse is the only animal who cannot, except under the most violent excitation, vomit through the mouth. This peculiarity is caused by a species of curtain at the back part of the tongue, which separates the mouth from the gullet. It hangs down from the edge of the rounded bone of the palate. There is, in other animals, room between the bottom of the curtain and the tongue for the air to pass, and the food to be returned; and, therefore, in them, whatever the stomach casts up, passes through the mouth. But, in the horse, the curtain forms a perfect division, and rests upon, not only the back part of the tongue, but against the forward portion of the windpipe. It is so contrived that, when the food has been gathered and fully masticated, the morsel is, by the action of the tongue, pressed against the hard palate, and is thus propelled backward, or it is pushed against the soft palate, which gives way; but if the pressure comes on the other side,

the inclination of the curtain backwards effectually prevents it yielding, and the contents of the stomach are carried outwards through the nostrils. It is not, therefore, anything about the palate which renders the act of vomition so difficult in the horse; but that difficulty depends on the peculiar construction of the stomach, which shall be described in the proper place. The length and singular attachment of the soft palate, however, prevents the horse from breathing through the mouth, and causes him to vomit through the nose alone.

The Teeth.—The manner in which the age of the horse may be determined by an inspection of the teeth will be presently considered; but there is something in the situation and construction of these parts that deserves notice. The nippers placed in the front of the mouth, in order to cut the grass, are covered with a hard substance called enamel. The enamel passes over the top of the tooth, to be indented and sunk into its centre, forming a pit or hollow. In process of time, however, this pit or hollow is worn away or ground out; and so the black mark in the fore teeth, which was nothing but the inside of this hollow, rendered dark by the food getting within it, gradually disappears.

The Tushes.—There is a small space between the nippers and these teeth, as well as between the tushes and the grinders. The tushes are weapons of offence and defence, and very much of the severity of the enraged horse's bite depends upon the use of these teeth.

The Grinders.—Behind the tushes are the grinders, and they are very curiously constructed. It would not be enough for the food of the horse to be cut and bruised; it must be actually ground down, in order

that it may be digested. The back teeth are so formed as to constitute the most perfect grindstones that can be imagined, by means of the roughened surfaces which they present. That these surfaces may not be worn down, or even worn smooth, the enamel is wove in with or twisted about in the substance of the tooth, and is externally covered with a very tough substance termed the crusta petrosa. The body of such a tooth is long wearing down; and when it does wear away, the bony matter inside, and the crusta petrosa outside, yield first, and the enamel is left projecting; so that they will always present unequal surfaces. To this must be added that they are formed with long fangs and are pushed upwards into the mouth after they are fully cut; and the fangs thus protected will stand at nearly the same height as long as the horse lives.

Wolves' Teeth.—There is often found, before the first grinder, an additional tooth—a very small one, and called a wolf's tooth: strange stories have been told of the injury it sometimes occasions. There is no proof of the mischief which it does. It has been seen in the mouths of horses sixteen years old, that have never appeared to suffer the least inconvenience. Should it ever seem desirable to remove it, this may be easily effected with the common keyed instrument used for extracting human teeth, or even with a pair of small pincers.

The Lower Jaw.—Some attention should be paid to the size of what is called the *channel*, that is, to the space between the branches of the lower jaw. If it is narrow, the head will sit awkwardly; for the rounded termination of the windpipe cannot be readily received

between the branches of the jaw; the head will then always be poking out, diminishing materially the beauty of the horse, and being a sad inconvenience to the rider, for the animal cannot be reined in except by extreme force. There are few things of so much importance to the pleasure of the rider or driver, as the setting-on of the horse's head—and this depends as much upon the width of the channel, as upon the length of the neck.

The Neck.—On the shape of the neck I need not say much: it should be proportionate to the shape of the body; neither too long nor too short. Plenty of muscle, nevertheless, may be allowed, or should always be found at the base of the neck; otherwise there will be a looseness in the motion of the neck unpleasant to the rider. An *ewe-necked* horse is an unpleasant goer; for there cannot be that curve formed between the head and the neck on which the pleasant management of the mouth essentially depends.

The Chest.—Although many horsemen too carelessly regard the chest in their examination of the horse, it is by far the most important part about him, for it contains most of the vital organs. There are two main things to be considered about the chest of the horse. In the first place it must be capacious. The size of the chest is a fair inference as to the dimensions of the lungs, and of the capacity of the heart, both of which are located within the chest. Big lungs will allow all the blood to be easily oxygenated, and the largeness of the heart will argue favourably for the circulation of the blood after it has been urged through the lungs.

There is, however, a point of more consequence

frequently overlooked—the form of the chest. We want the chest to accommodate itself to the different degrees of exertion. It has not only to prepare and circulate sufficient blood, but to enlarge, and to be capable of circulating the vital fluid, when the energy is exhausted by rapid motion. Therefore we must have a *deep* as well as a *wide* chest. A circular chest can never be changed so as to make it contain more than its form accommodates. A deep chest may enlarge, it may become more circular; the lungs can expand, admit more air, and arterialize more blood. Wherefore, we admit of the circular chest in the heavy draught horse; but in the hackney and the horse of light work, we look for something else.

For another reason we want the deep chest. The circular chest will be weighty in front; its very form will require thick and heavy shoulders. This will give a slowness of action, a battering of the fore-feet, and a want of safety: for the centre of gravity will be too near the front of the horse. The deep chest usually has its principal fulness behind the elbow, and thus the weight is thrown more under the horse: therefore, the form for useful purposes will be that of moderate depth at the girth, and a barrelling behind the elbow.

There ought to be plenty of room; the chest should be long; the ribs should be somewhat apart from each other, so that they may reach back towards the hips. We have then more room for the organs of respiration, and for those of digestion. There is more support given, and they are better able to discharge their healthy functions. Therefore, a horse *ribbed home*, or having but a small space between the last rib and the

hip bone, is almost sure to be strong and enduring. He may not be very speedy; but he may be depended upon for a good constitution, and as being capable of all ordinary service. If we require from the horse only occasional exertion, we may excuse a little hollowness of the flank; for there will be more room for the full stretch of the hind extremities, and, therefore, for a longer stride, and greater speed.

The Withers.—There are a great many important points connected with the spine. The withers are the upright projections of the ten first bones of the back. High withers have, in the opinion of every judge of the horse, been associated with superior action. In proportion as the withers are high, the muscles connected with them and the shoulder-bones have the advantage of additional leverage. Therefore, if the other parts correspond, we have generally high action connected with high withers. The withers thus afford an illustration of the mechanical advantage gained by the application of the lever. It is a law of mechanics that, in proportion as the arm of the lever is lengthened, the weight will be more easily raised; and, therefore, in proportion to the height of the withers, will there be the less waste of the muscular power. For the horse of quick work, high withers are desirable; but not for animals of heavy draught; for in proportion to this power of elevation, there is usually a lightness, which would be a considerable defect in him whose excellence depends on the weight which he is able to throw into the collar. High withers would be a defect rather than an excellence in the dray-horse. In race-horses, too, the withers may be too high, as, by causing the action to

be lofty, this formation diminishes the length of the stride.

The Spine of the horse is a beautiful contrivance. The chest and belly contain organs of the greatest importance, and essentially connected with life. If they were suspended from an unyielding bar, as of iron, the concussion would be fatal. If the back were unyielding, who could bear to be jolted upon the horse for a single mile?—On the other hand, if it yielded too much, it would betray a weakness incompatible with his attribute of strength. The spine is therefore divided into numerous bones, and these are connected together by an elastic substance, forming so many joints; each of these joints possesses a little motion; the aggregate motion of the whole, however, gives sufficient ease to the rider, without destroying the firmness of the back. The strength of the spine is secured by a mechanism that deserves peculiar attention. The round head of one bone accurately corresponds with a cup or hollow in that before it, and between them is placed an elastic substance; there are also strong ligaments as well as short muscles above and below, and on either side, so that, although we sometimes hear of a fractured spine, the joints are rarely dislocated.

Man will sometimes overload the horse, or urge him to too great exertion: then there is so much stress on these joints, that the ligaments are injured, and inflammation ensues; bony matter is thrown out, and the joints are destroyed. The back then becomes stiff, and the horse turns with difficulty; he will rarely lie down: he is "*chinked in the chine,*" and materially lessened in value.

The length of the Back.—Few, except those who have closely examined the structure of the horse, are aware what difference there is in the length of the back in animals of the same height. Compare the short Suffolk punch and the lengthy Cleveland in this respect. There can be no doubt that the long-backed horse is easier in his paces, for a long spring has a gentler motion than a short one. He will usually be speedy, for he will be able to bring his hind legs with more advantage under him: but just in comparison to the length of the spring will be its weakness; in proportion as the distance between the hind and fore legs increases, will be the weakness of the back. On the other hand, a back a little too short may promise strength; but it will be accompanied by rough action, by a deficiency of speed, a tendency to unsafeness, and particularly to overreaching. However, for general purposes, a short rather than a long backed horse is properly preferred, as possessing all the strength that can be desired; a hardihood of constitution which in a manner bids defiance to disease; and as much speed as is usually required.

The line of the Back.—The proper form of the back is a depression immediately behind the withers, and then a straight or gently-rising line to the loins. There are two deviations from this, the *saddle* and the *rouch* back. In the saddle back there is a hollowness. This betrays some degree of weakness, but is accompanied by easiness of action, and generally with an arched neck. It is scarcely an objection if the horse has to carry a light weight, and it gives nobleness to his appearance in single harness. The *rouch*-backed horse, whose back bends up is dear at any price; for there

is no keeping the saddle upon him, or preventing his back being galled: his hind legs are awkwardly doubled under him, his head is low, and he is heavy on hand.

The Loins.—The loins should be most carefully examined. They are rightly considered as significant of the general strength or weakness of the animal. If they are broad and muscular, he will be equal to considerable work: but. if there is no substance about them, he is of little worth for the saddle or the collar.

Referring the reader to the Treatise on Cattle, for an account of the contents of the chest and belly, it will be sufficient here to notice a few peculiarities in the structure of these parts in the horse.

The Stomach.—There is a strange difference between the four stomachs of the ox and the single stomach of the horse. That of the last animal is smaller than that of any other animal. It will not contain one-half of that which the ox would eat at an ordinary meal. The horse is essentially an animal of speed, and is liable to be called on to exert himself, at all hours. His stomach is placed close against the diaphragm, which is the chief agent in breathing. In every act of inspiration the diaphragm presses against the stomach, and more or less displaces it. If the stomach were large, this singular muscle would have to move it when full, and the horse would be soon exhausted by the violence of the exertion. Therefore this small stomach was given to him, that he might with greater ease display the speed which is his most striking characteristic. He can even work upon a full stomach better than most animals: but many a horse is destroyed by being hurried after a plentiful meal.

The stomach is not only small, but its structure is singular. One-half of it is cuticular, like the whole of the paunch of cattle, and constitutes a mere reservoir for the food. The food, after it has been chewed, is retained awhile in this cuticular portion, in order that it may be macerated. After that, it passes into the other part of the stomach, where the process of digestion commences. Therefore it is improper to give the horse for a meal more food than the cuticular portion of the stomach could hold. This sac has also a peculiarity in the arrangement of its muscular coat. The layers of fibres which compose it are so disposed that the opening into the stomach is much stronger than the exit from it. The former opening could not therefore be forced open in case of revulsion, but the stomach would sooner be burst (as indeed often happens) than the entrance to the sac be forced open. This is the secret of the horse not being able to vomit.

The Intestines.—Digestion continues to be carried on in the intestines after the food has passed the stomach. There are six intestines—three of which are large, and three small. The small lead from the stomach, and are named, the duodenum, the jejunum, and the ileum. The large terminate at the anus, and are called the cæcum, the colon, and the rectum. The duodenum or first gut is larger in the horse than in most other animals. The process of digestion still proceeds in the intestines, and is not perfected until it has passed through the larger intestines. The duodenum has the pancreatic and biliary duct emptying into it. The jejunum in the horse is a mere arbitrary name copied from the human anatomy, and given to the

beginning of the ileum, which is the longest of all the intestines, and empties into the first of the large bowels. The *cæcum*, a blind pouch often called the *water-gut*, is continuous with the small intestines; and the more fluid part of the food seems to fall into the cæcum, which will contain at least four gallons of water. It is thrown into cells like the colon which are plainly designed for the same purpose, the retention of the aliment. The *colon*, which is of an enormous size in the horse, and will usually contain about twelve gallons of fluid. Here a provision is made for the retention of the yet imperfectly digested food. The colon is curiously puckered into a great many deep cells, in which it is for awhile detained. When the contents of the stomach, after having passed through all this complicated apparatus, has at length reached the *rectum*, or last intestine, a very small portion of undigested food will remain, and that is evacuated as dung.

The Liver.—Two fluids enter the duodenum by the same small orifice, in order to contribute to the process of digestion. The one is called the pancreatic juice, and is in nothing different from that which has been described in cattle; but the bile in the horse comes immediately from the liver, instead of any portion of it passing into a gall-bladder. The horse has no gall-bladder: his stomach is small; it must, therefore, be oftener replenished; the food must be oftener passing out of it; and there can be no necessity forthe gall being detained in any reservoir for use at a distant time.

There is nothing peculiar about any of the other contents of the belly, and therefore the diseases of the animal will be immediately considered.

EVERY MAN

HIS OWN FARRIER.

CHAPTER I.

ON INFLAMMATION.

A VERY great proportion of the diseases of the horse are connected with *Inflammation;* for the heart and arteries are large, the arterial system is strong, and the animal is exposed to many causes of irritation. Inflammation is an increased flow of blood, inducing an unnatural secretion; the heart or the vessels act with too much energy, and the blood is driven along too rapidly, or in too great quantity. Inflammation may be either *local* or *general.* We may have inflammation of the eye, of the lungs, or of the foot, and the general constitution may not be much affected: the inflammation is then said to be *local:* but, after awhile, the vessels of the whole frame will take on the same action as those of the diseased part, and *symptomatic fever* is produced. In some cases the action will be general from the beginning, or rather, we are unable to ascertain the part which was first affected: this form of inflammation is termed *fever.* All these will in turn pass in review before us.

Inflammation may be either acute, subacute, or chronic. It may have suddenly arisen, may be exceedingly violent, and may endanger life; but by prompt treatment it may speedily disappear, leaving scarcely any trace behind. At other times it may rapidly destroy the part by its intensity. This is called acute inflammation. Sometimes it may have gradually commenced;—it may never reach any great degree of intensity, but it is evidently doing permanent mischief:—it is altering the structure, as well as disarranging the functions of the parts. This kind of inflammation lasts a long time, and hence is termed chronic. The subacute is a variety not very well defined, but it runs between the two already mentioned.

The treatment will vary according to the nature of the organ attacked and the violence of the inflammation; but among the successful opponents of inflammation are bleeding and purging. It may be convenient to say a few words with regard to each of them before we proceed.

BLEEDING.

In general inflammation blood should be extracted from a large orifice, and the jugular vein is the most convenient vessel to extract blood from because it may be readily got at, and easily fastened up again. In violent inflammation of any part which threatens to affect the whole system, the practitioner should bleed. The precise quantity of blood that should be taken away in most inflammatory cases, cannot be previously determined; but the old rule was that the finger of the operator being kept on the artery, the blood should be

permitted to flow until the pulse became materially softer, or fluttered; but the better and the newer practice seems to be to take only such a quantity as causes the horse to sigh, yawn, become quiet, or exhibit an altered disposition. These are the general rules in the treatment of inflammation—to bleed promptly—until the circulation is evidently affected, or until the character displayed by the animal seems changed.

Of equal importance with it is the quickness with which the blood is abstracted. The loss of three quarts, poured out in a full stream, from a large orifice, will affect the horse more than double the quantity suffered to escape in a small stream, from an insufficient opening. The fleam or the lancet should, therefore, be sufficiently broad shouldered.

The lancet is the most portable instrument; and, after a little practice, may be even more depended upon than the fleam.

When a sufficient quantity is taken, and *before the blood is sponged away from the neck*, the edges of the orifice should be brought together. *This should be done without lifting the skin more than is necessary*, and by means of a rough or an angular-pointed pin, passed through the integuments, around which a small quantity of tow is twisted. After this the horse's head should be tied up, and on no account ought it to be turned out to grass. Care should be taken not to pin any hair in with the wound, for bleeding in the horse is often followed by bad consequences, and every precaution is required to prevent these results.

Should swelling appear; the lips of the wound open; and a thin ichorous fluid be discharged from the wound;

and the neck feel hot, the pin ought to be immediatel withdrawn, and the part should be bathed several time in the day with cold water.

Inflamed vein is one of those cases that must not b trifled with. If the wound does not, within a da after the application of the water, appear disposed t heal, such mild measures must be discontinued, an more active treatment adopted.

Sometimes the first indication of an inflamed vein i a swelling of the part, which often increases rapidl above the seat of bleeding, from the inflammation of th vein obstructing or stopping the flow of blood. Whe this is the case, it becomes a somewhat serious affair The vessel feels like a hard cord under the fingers, an if left alone, abscesses form along its course, and th brain may at last become affected.

The head of the horse should be tied to the rack, an his diet consist principally of mashes or gruel, so as t avoid the movement of the jaws as much as possible The orifice should be kept open, though it seldom i disposed to close, and a blister, without loss of time should be applied over the enlargement. The bliste should be washed off the second day, and repeated, onl on the second occasion it should embrace a larger sur face ; and blister after blister, as quickly as the circum stances of the case will allow, should follow one anothe until the desired effect is attained. If any matte exude from the orifice, it may be enlarged, and, if an pipes or sinuses form, either setons should be passe through them or they should be laid open. Th abscesses should be treated after the manner recom mended under that head in another part of this work.

With this treatment, the horse will generally be fit for work in about a month; although the vein will frequently be lost, yet the swelling will subside, the blood find new channels, and little after-inconvenience will be experienced. The horse, however, that has lost a vein, will not be suited for fast work until twelve months have expired. Slow work he may perform, but the collar should be looked to, and the horse must on no account be turned out.

When there is much mange about the neck, there is always considerable hazard in bleeding from the jugular. The skin is already in an irritable, if not inflamed state: this is much increased by the wound inflicted by the lancet, and troublesome swellings, sinuses, and sloughing often ensue. Fortunately, however, bleeding is not often necessary in this disease, and, when it is thought to be imperative, the blood had better be taken from the foot.

If the practitioner should fail to open the vein at the first attempt, it will be better to endeavour to bring the second thrust exactly above the orifice he has made, and to strike again more gently upon it than to make a fresh wound; but, if it is necessary to have recourse to bleeding three or four hours after the first operation, the old wound should not be opened, but a new incision always made.

In cases of local inflammation, the bleeding should take place as near as possible to the diseased part. It will be easily comprehended that by acting upon the immediate part we gain all the good effects of general bleeding at a much less loss to the general system. This object may be accomplished in several ways.

Punctures or incision may be made, and fomentations or a poultice applied over them to promote the bleeding. A piece of a vascular surface may even be cut out, as is generally done when the horse is bled from the foot, or a vein in connexion with the diseased surface may be opened. The proper bleeding-places will be pointed out as we consider the inflammatory diseases of different parts.

PURGING.

There are few medicines so abused by the groom, and sometimes by the proprietor of the horse, as purgatives. They are given without any rhyme or reason, and sometimes in fatal doses. Perhaps it may be affirmed that more horses are destroyed by physic than by any one disease to which they are subject. On the other hand, there are no medicines so useful as purgatives when judiciously employed. They are especially useful in inflammatory complaints. They produce, while acting or preparing to act, a kind o nausea which is attended with a general relaxation highly to be desired in complaints that are accompanie by general excitement of the nervous and vascula systems. They remove from the stomach any cause c irritation which may have existed there, and whic might prolong, if it did not produce, the complain They diminish the temporary supply of nutriment t the frame—for the food is hurried along the intestine and expelled, instead of being converted into chyle an taken up by the lacteal absorbents ; and more especiall they lessen the quantity of fluid circulating through th system. The bulk of aqueous fluid discharged by th

action of a purgative is sometimes enormous; being in consequence of the stimulating action of the purge poured forth by the secretive membrane lining the intestines.

In the early stages of fever, physic must be given with some caution; but, in local inflammation, except where there is a strong sympathy between the diseased part and the bowels, it may be exhibited or not, according to the apparent urgency of the case. When the lungs are inflamed it is a common saying, "purge and kill," and this maxim has almost grown into a rule of practice.

There is another way in which a purgative may be useful in cases of inflammation, *viz.*, by determining in some degree the current of the blood from the inflamed part; thus giving double relief, by the different direction of the current, as well as by the diminution of the actual quantity circulating through the vessels.

Horses that are fat and plethoric are often benefited by physic, and a great deal more so than by bleeding. The regular purging at certain times of the year cannot be commended. It is a good maxim "to let well alone;" yet at all times mild physickings are much more harmless than small bleedings, for they simply evacuate the bowels, and, by thus acting, frequently do permanent good. The effect of bleeding on a fat horse is doubtful even *at the time*, and most certainly injurious *afterwards:* for it deprives the animal of that fluid of which a fat horse always has too little, and in a short time the horse becomes either dropsical; or other ill effects of depletion show themselves.

In greasy swellings of the legs; lameness attributable

to the joints; old cough, worms; and mange, physic i very useful.

The purgatives of the horse are very few in numbe The superior efficacy of the *Epsom salts* was spoken o in the work on *Cattle* as applicable only to the ox they are uncertain in the *Horse*, although given i enormous doses; and occasionally they will sadly gripe. They are useful only in clysters. *Glauber salts* have no better or more certain effects. *Castor oil* although the farrier gives bottle after bottle of it, to th great expense of the owner of the horse, is not only a uncertain, but sometimes a decidedly-injurious medicine Mild and harmless as it is in the human being, wh takes it to relieve griping and remove irritation, it is to apt to gripe the horse, and there is no doubt that it ha occasionally produced fatal inflammation of the bowels *Linseed*, *olive*, and *neat's-foot oils* are better things they will rarely do harm, but they are improved an rendered more certain in their action by a drachm chloroform being added to the pint dose of either. ***Th best and almost the only purgative that can always b depended upon is aloes.***

There has been a great dispute about the kind aloes. The Cape is the cheapest, and the Barbadoe usually three or four times as dear. The Cape will wor tolerably, but in a somewhat larger dose. The Barb does are the most certain in their effect, and can alon be depended upon when the disease under which th horse labours forbids exercise. The Cape will some times gripe, the Barbadoes will less frequently do so.

The following will be a good physic mass for comme use :—

RECIPE (No. 1).

Physic Mass.

TAKE—Barbadoes aloes, very finely powdered, fifteen pounds;
Ginger, powdered, one pound; and
Treacle, seven pounds and a half:
Beat them well together, and keep them in a jar closely bladdered.

A very mild ball of this mass will weigh three quarters of an ounce; the quantity may be increased to an ounce and a half, beyond which the dose should not be carried, except under the direction of a practitioner.

If mercurial physic is wanted it may be thus made:—

RECIPE (No. 2).

Mercurial Physic Ball.

TAKE—Physic mass, from 6 to 9 drachms; and
Calomel, from one drachm to one drachm and a half:
Beat them together, and form them into a ball.

The common mode of giving the calomel over night, and the physic ball in the morning, is objectionable. It is borrowed from human medicine: but in the horse calomel only assists the action of purgatives, and by giving it alone we lose that for which it is principally valuable.

In some cases, as in inflammation of the brain, it is desirable that the physic should act as quickly as possible. There is another purgative which may then be resorted to, but which, from its irritating properties should otherwise be avoided, and that is, the croton nut, or oil.

The following would be the prescription :—

RECIPE (No. 3).

Very strong Physic Ball.

TAKE—Physic mass, 10 drachms; and
Croton nut, from 10 to 15 grains:
Beat them together, and make them into a ball.

This may be given at first, if it is wished that th physic should work quickly ; but if purgative medicin has been already administered, ten grains of the croto nut may be made into a ball with a little linseed meal.

The *preparation* for physic is as important as th physic itself. The horse should, when possible, be we mashed for twenty-four hours before he has the physic and the mashes should be made of bran and water, an given during the working of the physic.

The management during physic is also deservin of consideration. If the weather and the disease wi permit, the horse should be walked out for a quarter o an hour three or four times on the day on which th physic is administered. On the following morning h should be exercised again ; but no quicker pace mus be allowed. If at the end of the second day the physi should not operate, nothing should be immediately don except to administer injections of warm water, in eac of which half a pound of Epsom salts has been dis solved ; the which will generally do good, and ca hardly be prejudicial. If all these means fail, anothe ball may be given three days after the first was admi nistered.

As soon as the horse begins to purge, all exercis should cease. There is not a more general and fata

rror of the groom than that which prompts him to ncrease the exercise when the physic begins to ope- ate. The horse, when this foolish custom is fol- owed, certainly purges more, but more than a ra- ional man would wish; he is likewise often griped; ow and then inflammation of the bowels supervenes— n inflammation that is not easily subdued.

From the time of administering the physic the vater should be given to the horse lukewarm, if he vill drink it so; at all events its coldness must be aken off. No corn should be allowed until the action f the medicine has ceased; oats, if imperative, should e mixed with bran, either dry or made into a mash, if he animal can be induced to eat it.

Back Raking.—The introduction of the hand into he rectum, and the removal of the dung which it may ontain, is a useful operation. It should be always ractised when physic is slow to work: not only a ortion of dung is removed, but the excitement of the ectum, by the introduction of and motions of the hand, xtends to other parts of the intestinal canal, and they re disposed more readily to respond to the stimulus of ne purgative.

Injections are too much neglected, especially in etarded purgation, and in those cases where steady nd copious purgation is required. Warm water, or ap and water, or a solution of Epsom salts, half a ound at a time, answer very well in ordinary cases. alf a pint of the spirit of turpentine, combined with two uarts of soap and water, is more active, and in flatu- nt colic is frequently of much use. In gripes, opium often excellent in its action, administered in this

form; but injections can be infinitely varied, and the varieties will hereafter be dwelt upon. In every larg establishment, the patent injection pump has supe seded the use of the old bladder and pipe, and even the syringe, on account of the ease with which an fluid may be introduced by its means.

CHAPTER II.

PHRENITIS (INFLAMMATION OF THE BRAIN); STAGGER

THE term *staggers*, by which several of the diseases the head used to be designated, should now be com pletely laid aside. It was derived from the staggerin gait which frequently accompanied particular affections but several diseases are occasionally accompanied b symptoms which may be confounded.

Inflammation of the brain is either of its substance its membranes, or of both. It may be produced b over-exertion in close and sultry weather; especially the horse is gross, and has lately had but little wor It is sometimes consequent upon other diseases. It ma spring from metastasis, or change of inflammation fro one organ to another. Inflammation has suddenly le the bowels, the foot, or the lungs, and attacked th head; but it is oftener connected with some affecti of the stomach.

A distinction should be drawn between inflammati of the brain and congestion of that organ. In the latt case the activity is decreased; consciousness, if n

entirely lost, is in a great measure gone. During the first symptoms of compression of the brain the horse is dull, hanging his head as if he were half asleep. In the midst of eating, a lethargy will come over him; he will droop his head, with his tongue hanging out of his mouth, the saliva dribbling from it, and he will stagger or almost fall. If he is suddenly roused, he will look vacantly around him, and doze again. If he falls, he will appear to be frightened and scramble up, but it will be to stagger and to fall again. It is determination of blood to the head, pressing upon the source of the nerves, and producing this unconsciousness.

This continues for twelve or twenty-four hours, and sometimes longer, and then, suddenly, the scene changes. The nature of the disorder has become altered, and to congestion inflammation has succeeded. The horse is all alive; his ears are pricked; his eyes are glaring; he is shifting his posture every moment, pawing and stamping. For a little while he seems to know where he is and what he is about, but that soon passes over: his flanks heave, and his nostrils expand, and he whinnies, and roars, and dashes, and plunges, and bites, and kicks, without object and without consciousness. There are periods of remission. He exhausts himself by the violence of his efforts, and remains tranquil for a brief time; so he goes on, until he has probably ruptured some vessel, and then perfect stupor ensues; or he wears himself out by his continued struggles.

If he is seen in this violent state, there can be no doubt about the disease: it is pure *phrenitis*, or *inflammation of the brain*. Then, with due regard to his own safety, the practitioner must endeavour to open

both jugulars, and to let the blood flow as long as i will. The only hope is in producing faintness and temporary collapse. If it can be effected, in some moment of comparative quietude, a purgative should be administered in the form of a strong solution of aloes, with croton farina. The following is a good formula for this occasional and quickly-operating purgative.

RECIPE (No. 4).

Strong Physic Drink.

TAKE—Barbadoes aloes, one ounce;
Gum-arabic, one ounce; both being powdered:
Pour on them a pint of boiling water. A portion of the aloes will be dissolved, and the greater part of the remainder suspended by the solution of the gum. Four ounces of this may be taken, and ten grains of the farina of the croton nut thoroughly rubbed down with it, and the rest cautiously added, and the mixture given every twelve hours until it operates.

If this cannot be administered in consequence of its bulk, thirty drops of croton oil should be given in the most convenient form possible. If the horse seems to recover a little from the attack, he must be let alone his diet should be very spare, and ought to consist of mashes, his bowels being kept open by small doses of aloes.

We know but of two diseases with which it is at all possible that this complaint can be confounded—they are colic and hydrophobia; but in the first the horse strikes and stamps his belly, he rolls rather than plunges, and looks piteously at his flanks, and is perfectly conscious: and in hydrophobia, although he plunges strangely about, and does much mischief, there is method and perfect consciousness in that mischief.

Any sudden and violent disorder may to a degree approach in its symptoms to inflammation of the brain; but scarcely any to that extent which can be positively deceptive.

The most unpleasant and puzzling state of the case is when congestion of the brain is present. It is absolutely necessary to get at the cause of that stupor, or the mode of treatment cannot be determined upon. If the horse is at grass, the owner should carefully inquire whether he has been lately turned on to richer pasture; or, if he is in the stable, whether he may have got at the corn-bin and gorged himself; or, whether he has been lately worked long and hard on an empty stomach, and then fully fed. If the cause can be traced to an overloaded stomach, water must be withheld, for it would swell the mass which is already distending the stomach. A strong purgative (Recipe No 4), to which may be added two drachms of carbonate of ammonia and three ounces of sulphuric ether, should be administered without delay, and the stimulant (omitting the purgative) ought to be repeated every hour. The body should be clothed; the legs bandaged, and friction applied to the skin. The animal ought to be put into a loose box, and, if possible, a little very gentle walking exercise enforced. Enemas of turpentine ought to be thrown up every hour at least, especially if they are not retained. Should no improvement be witnessed in six or eight hours, a pint of oil, in which a drachm of camphor and the same quantity of chloroform has been dissolved, may be given, and embrocations applied to the legs and abdomen. The carbonate of ammonia, after the second trial, may be changed for

the chloride of zinc, a scruple being dissolved in a pi
of cold water, and the sulphuric ether should be po
severed with. After another six hours the horse ma
be bled; but it is not well to do this at first, as th
strength is wanted to rouse the system if possibl
Now, however, fearing the supervention of inflamma
tion, bleeding is adopted; not because it is absolutel
necessary, but because we wish to anticipate the co
sequences we know are too likely to ensue. Till in
flammation threatens, stimulants must be employed
but at the same time, knowing the probable issue, th
horse must be carefully watched, and on first perceptio
of the eye brightening, the breathing becoming mo
sharp, the pulse quicker and also harder, and th
surface of the body hot, depletive measures must b
adopted, although the chance of saving the animal
indeed remote.

If some other disease has preceded the attack, the
the circumstances of the case will suggest the treatme
which cannot here be fully described. On such occ
sions, however, the stupor too frequently proceeds fro
debility, and the attendant should be cautious how h
sets to work depleting a system which may alrea
suffer from exhaustion.

When an attack of phrenitis is anticipated, let eve
means be employed to draw the blood from the bra
Stimulants must not be given, but purgatives, as bef
recommended, should be administered. The feet a
belly, and even the haunches, should be rubbed w
embrocation, or a blister even may be applied. T
liquor ammonia, sprinkled on a cloth several tim
doubled and covered by another, held close to t

bdomen, will be a speedy and effectual counter-irritant. A sheepskin to the loins is also of benefit. Sedatives re required. Digitalis in drachm doses every fourth our, combined with an ounce of the infusion of Indian bacco may do some good. Warm water to the head, n this stage, has been of service. Enemas should be opious and frequent; but, after all, it is seldom that the ssue is successful, or that many of these directions can e followed.

CHAPTER III.

VERTIGO (MEGRIMS).

THIS is the mildest form under which congestion of lood in the vessels of the brain shows itself. A horse ill commence his journey apparently well, but the ay is hot—he is a little too full of flesh—he has not een lately in full work—or he has been driven a little ster than usual—or he wears a collar a little too ght: all at once he begins to falter—he shakes his ead repeatedly—looks around him half unconsciously, nd perhaps stops short and trembles. If the driver is ware of what is the matter, and will give him a minute's st, he will sometimes recover and go on again, al-ough not quite so freely as before. But at other nes, either without warning, or any warning that the iver has observed, he drops—he lies for two, three, five minutes apparently insensible, and then scrambles , and goes on again; or he falls, and violent struggles mmence, which, however, in a few minutes subside.

The horse gets up, looks wildly about him, and continues his journey; yet somewhat oppressed and exhausted: but he will occasionally drop and suddenly expire.

The method of giving present relief is simple and effectual enough. The journey should be discontinued and the horse led to the nearest stable. If that be impossible, the collar should be looked to and the bearing rein let down. A wet cloth should be kept upon the head, and the pace should be more moderate. Bleeding is not necessary; it has been largely tried, and proved to do no good.

When the horse gets home he should be well mashed and, if he can be spared, a dose of physic should be given. When the physic has set, some alterative medicine may or may not be serviceable; but should any be given, a ball of the following nature may be administered every night, for ten days or a fortnight.

RECIPE (No. 5).

Alterative Ball.

TAKE—Powdered nitre, three drachms;
Sulphur, two drachms;
Black sulphuret of antimony (black antimony), two drachms;
Linseed meal, two drachms:
Beat them into a mass with palm oil.

A horse that has once had megrims will be too subject to them again; and the honest man will not sell, and the prudent man will not keep, the animal likely to injure himself and others when driven.

CHAPTER IV.

STOMACH STAGGERS.—INDIGESTION.

THE symptoms of this disease have been sufficiently described at page 30, where the various indications of the characteristics of congestion of the brain passed in review. In this case, however, the staggering and unconsciousness, with hard breathing and fixed eye, continue, and the animal becomes more and more insensible and helpless. These drowsy symptoms sometimes subside, and are succeeded by violence, of the same kind as that of phrenitis: this may be followed again by stupor, or the animal may perish without the violent stage appearing.

It is essentially necessary to ascertain the cause of this disease. A very frequent one is over-distention of the stomach. The horse may have got loose in the night, and filled himself with corn, or beans, or chaff; or he may have been worked longer and harder than usual on the preceding day, and have had a double feed given him at night; and the powers of the stomach having been exhausted with those of the frame, it is consequently unable to act upon its contents, so as to expel them. If no positive information can be obtained, the appearance of the horse may direct the judgment as to the probability of their having occurred; for the animal will be evidently bloated, much swollen, and the lethargy will be more complete when it originate with over-gorging than when it springs from other causes.

This disease has often made its appearance in large establishments, where horses have been kept long fasting, and then allowed an unlimited quantity of dry food. In these cases the desire for provender has been awakened by this long fasting, and then been unrestrictedly gratified: the brain has become affected from the pressure of the stomach upon the diaphragm, thus obstructing the circulation by preventing the perfect oxygenation of the blood.

This disease, however, will sometimes occur from simple indigestion without this strange distention of the stomach; yet not without evident affection of that viscus. When the hours of feeding are irregular, the stomach becomes weakened by being long empty, and is oppressed even by an ordinary meal. This happens to farm horses after too long a day's ploughing, and especially if the food with which they are afterwards supplied be not very good. It is foolish economy to keep the half-mouldy provender of the farm for home-consumption. Old horses are particularly subject to stomach-staggers from the digestion sharing the general debility of the system; and they are so, especially if they should get a few days' rest, and be fed somewhat better than usual. The weakened stomach will not be able to bear the unusual stimulus, and indigestion will ensue. In some cases stomach-staggers has prevailed as an epidemic, and has appeared amongst horses at grass, as well as in stable; and though the symptoms have been very similar, yet they could not be referred to distention, but might, in a great measure, be traced to a loss of vital energy in the stomach.

The treatment must be principally directed to the

removal of the offending body. If there seem depression of the system, bloodletting should be abstained from. Liquids ought to be withheld, save where they are required in the form of medicine, and no time should be lost in administering a strong dose of physic, such as the draught No. 4, page 32, to which may be added a drachm of ginger, and a scruple of chloride of zinc. The operation of the physic should be assisted by frequent turpentine injections.

It will not be advisable to repeat the aloes, lest it should accumulate and produce inflammation; but in its stead, a pint of linseed oil with two drachms of gentian, a drachm of camphor, and the same quantity of chloroform, should be given every six hours until the bowels are properly opened. For the other measures, they have been generally pointed out under the head of inflammation of the brain; and of these such as seem to be required may be employed, bearing in mind that the chief object is to get the bowels open. When this is accomplished, the diet should consist of green food, carrots, or mashes, in spare quantities; and the following ball may be administered daily, for three or four days.

RECIPE (No. 6).

Tonic Ball after Indigestion.

TAKE—Powdered nux vomica, half a drachm;
Sulphate of iron, one drachm;
Extract of gentian, two drachms;
Powdered ginger, one drachm:
Beat them together, and make them into a ball.

CHAPTER V.

RABIES, OR HYDROPHOBIA (MADNESS).

THERE is a disease, and one of the nervous system, which may be occasionally confounded with phrenitis, and which may now be conveniently considered, viz., Rabies.

If a horse has been bitten by a mad dog, or his muzzle (the corners of the mouth having been galled by the bit) has been licked by one of those dogs which are within the stable, and which has become mad, the horse will most probably, in his turn, also become rabid. The disease will suddenly appear, and, at the commencement, bear considerable resemblance to phrenitis. The animal will stop, look about him, stagger, and fall. He will immediately get up again, and proceed on his journey, but presently he will begin to stagger once more; and the sooner he is got home the better. The difference between rabies and phrenitis, in this stage of the disease, is that the rabid horse preserves his consciousness throughout; which in phrenitis is lost from the beginning. Before a very brief but uncertain period has expired, the mad animal usually becomes violent to an extraordinary degree; stamping, kicking, biting, tearing, and demolishing everything within his reach. Here, again, the difference between the two complaints is sufficiently manifest;—the rabid horse knows what he is about, and is trying to do mischief,—the phrenitic horse is struggling and plunging without design or intent to injure.

There is no remedy but the bullet, and the sooner that is applied the better.

Although hydrophobia, or the dread of water, is the characteristic of this disorder in the human being, it is singular that, in the domesticated animals, and particularly in the dog, by whom the disease is oftenest communicated to men, it should have no existence. The horse, however, is an exception to this, for he does exhibit hydrophobia—either he is unwilling to drink, or the head is violently snatched from the pail in the midst of his drinking; the muscles of the face are strangely distorted; or he trembles from head to foot, and sometimes falls to the ground convulsed at the sound of dripping water.

When a horse is known to have been bitten by a mad dog, the wound should either be cut out, or the lunar caustic applied to it, so as to destroy every part of it. If this is carefully done, the probability of danger will be removed. The lunar caustic is the most effectual preventive: a skilful veterinary surgeon should, however, be employed. Medicine will be completely useless; and all the pretended nostrums, which are celebrated in various parts of the country, are mere delusions. After the disease has once appeared in the horse, no man should be permitted to hazard his life in the attempt to administer medicine; and it should be remembered that the attendant on the rabid horse is always in danger, since the saliva that falls from its mouth, or is thrown furiously about, if received upon a wound, or the slightest abrasion, may produce as dreadful effects as those caused by the bite of a rabid dog.

CHAPTER VI.

INFLAMMATION OF THE EYE, OR COMMON AND SPECIFIC OPHTHALMIA.

SPECIFIC ophthalmia is one of the most annoying maladies that the practitioner has to deal with. A horse, and particularly a young horse, may be perfectly well on a certain day; but when he is examined upon the following morning, his eyelids are swollen; they almost cover the eye,—they are hot and tender;—the eye itself may or may not be cloudy; but the conjunctiva, covering the white that surrounds the coloured part of the eye, and forming the lining of the lid, is much reddened: there is a considerable flow of tears, while the horse hangs his head, and is in evident pain. It will be always prudent to examine, in the first place, whether these symptoms may not be the effect of accident; whether the horse may have been bitten by his companions, or struck by his attendant; whether a bit of hay or husk of oat may not have got into the eyes, or other injury have happened. In the majority of cases, however, nothing of this kind will be detected. Sometimes the horse will have catarrh, and discharge from the nose; but oftener the eye alone will be the part affected, and that without any appreciable cause.

Young horses, about four or five years old, are most subject to it; they are approaching to or have reached their full growth, and they have the consequent tendency to inflammation. Black horses are said to be

more subject to inflammation of the eyes than those of any other colour; but this assertion is not substantiated. Now and then ophthalmia will be very prevalent in a neighbourhood; or two or three horses in the same stable will be attacked at the same time;—it is epidemic—it is dependent on some peculiar atmospheric influence; but it does not seem to be in any case infectious.

Improper management may lay the foundation of this disease. If the horse is kept in a close stable, and his eyes daily exposed to the stimulating ammoniacal fumes that arise from the urine, it is easy to suppose that the eyes will be weakened and predisposed to disease. This, however, *prepares* for, but does not *produce* ophthalmia, which sometimes occurs even in a colt at grass. There is, probably, no complaint that is more hereditary; and it has spread over whole districts from the incautious use of a blind stallion; or of one that had suffered from serious disease of the eyes.

The practitioner, or the owner of the animal, will carefully examine the circumstances under which the disease appears. If it is connected with cold or influenza he will treat the horse as for those diseases; paying little attention to the eye beyond ordering it to be kept clean, and trying to soothe the pain by the use of anodyne washes. Generally, the inflammation of the eye will disappear with the disease with which it is associated. If any foreign agent, such as hay-seed, dirt, &c., be discovered in the eye, of course it must be removed, and after that the washes may be employed. If there is considerable heat, swelling, weeping, impatience of light, and general cloudiness of the eye, it may be well to do something besides simply bathing the

part with soothing lotions. While the inflammation is most active, warm water may be applied. Warm applications agree with the eye of the horse much better than cold. Frequent fomentations, the eye being left uncovered, and the stable darkened as much as possible, will generally be more useful than any wetted pad kept in contact with the eye. This pad often increases the irritation by its pressure, and the heat by preventing evaporation.

Where the inflammation is severe, the angular or eye vein may be opened, and a little food placed upon the ground will, if the horse will eat, assist the flow of blood; as the motion of the jaw and position of the head promotes the bleeding; or the practitioner should open the eyes, and turn the lids upwards and lightly scarify them with a keen lancet. The abstraction of even a few drops of blood from the immediate seat of inflammation will often be productive of the very best effects. The fomentations should, in the last case, be more diligently continued, in order to encourage the bleeding.

Some sedative application may afterwards be used to the eye. Either of the following lotions may be tried; but there is often a peculiarity or caprice about this complaint; and that which will succeed at one time will have no effect at another. It would, therefore, be proper to apply the following receipts in the order in which they stand:—

RECIPE (No. 7).

Goulard Wash for the Eyes.

TAKE—Extract of lead, one drachm;
Distilled or soft water, eight ounces.

RECIPE (No. 8).

Anodyne Wash for the Eyes.

TAKE—Laudanum, or tincture of digitalis (the latter to be preferred), half an ounce;
Distilled or soft water, eight ounces.

RECIPE (No. 9).

TAKE—Sugar of lead, one drachm;
Sulphate of zinc, one drachm.
Dissolve each in half a pint of water. Mix and filter.

These must not be wasted about the outside of the eye, but, with a camel's-hair brush, they must be introduced into the eye.

If these lotions should not remove or abate the complaint, that which the human practitioner finds so useful, but which is not always so beneficial in the horse, may be tried—viz., the vinous tincture of opium; two or three drops of which should be got into the outer corner of the eye by means of a camel's-hair brush.

If, however, there cannot at the beginning be traced any connexion between this inflammation of the eye, if it seems to bid defiance to these applications, it may be suspected that it is *specific* inflammation, and the horse-owner immediately pursues another method.

In the treatment of specific ophthalmia it is of the utmost importance to consider the condition of the animal; for the disease being of a constitutional nature, general rather than local measures are to be adopted. Should the horse be poor and exhausted it must be supported, and nothing ought to be given calculated to increase the debility. The digestion

must be regulated by mild aperients, or, if possible, by mashes and clysters without any laxative. Soft and nourishing food, with pure air, and a loose box somewhat darkened, are required. To the eye a camel's-hair pencil dipped in hydrocyanic or prussic acid may be applied thrice a-day; and a ball containing a drachm of powdered colchicum and half a scruple of calomel may be administered night and morning. Tonics even may, in extreme cases, be freely given, notwithstanding the presence of apparent inflammation: they are in these troublesome cases often the most powerful and only active opponents to the disease. Gentle measures, therefore, are required when the state of the animal appeals to our forbearance; but if the horse is in high working condition, irritable and strong, mild means are not to be depended upon. The degree to which severe remedies are called for, the judgment must decide; but in an aggravated case, the following is the plan of treatment commonly pursued by most practitioners:—

"He administers a dose of physic; not because he often sees any immediate good effect from it, but because it seems to be one of the means by which he has the fairest chance of success: and he bleeds if he imagines that there is much fever; and, if the inflammation is very intense, he bleeds largely from the jugular, and to this he adds a local bloodletting. He gets as much blood as he can from the angular vein, that vein which is to be found at the inner corner of the eye, and which comes from the orbit of the eye; for, by bleeding there, he will be most likely to unload the congested vessels of the part. He continues

diligently, and for weeks together, the local applications just recommended; giving a fair trial to each, and changing them as each seems to lose its effect; and he inserts a seton under the jaws, to which he perhaps adds two setons in the cheeks. He regularly administers the medicines which he would use in cases of fever, with a view to lower the circulation." A good fever-ball for the horse, and one which is applicable to most cases, is the following:—

RECIPE (No 10).

Fever Ball.

TAKE—Powdered digitalis, one drachm;
Emetic tartar, half a drachm;
Nitre, two drachms;
Sulphur, one drachm;
Linseed meal, two drachms:
Beat together with palm oil.

There is one thing which he should never do, although it is the continual practice of the farrier. The haw may partake of the general inflammation, and be enlarged. It is drawn over the eye in order to protect it from the light, and on account of its enlargement, it may not be easily retracted. To the ignorant observer it would seem to be an injury, and a nuisance to the eye. When the general inflammation is abated, it will become of its natural size and return to its place of concealment. If the practitioner cuts it away, he may give a little relief by the bleeding which will follow; but he would give a great deal more if he had scarified the eyelid, or opened the angular vein; and he would not have deprived the horse of the means of defending

his eye from the dust of the roads. He would by n scarification have prevented the animal wiping awa the dirt when it gets into the eye; or have entaile upon the horse a degree of suffering of which the pai that a man feels under similar circumstances will giv but a faint idea. The haw is no unnatural excrescence it is a very useful part, enlarged by sympathising wit the general disease.

After a great deal of trouble, perhaps the eye get better; but there remains a cloudiness about it, and a very singular character. It is thick to-day, and ma seem to be clearing up to-morrow: on the third day however, it often becomes more opaque than ever, an at length is in a manner fixed. The sugar, or salt, o pounded glass of the farrier, will renew the inflam mation, and increase the opacity.

The cautious practitioner will, in such a state o parts ensuing upon a disorder, pay small attention the local affection; his chief endeavour being directe to eradicating the disease from the system, which th cloudy eye testifies is not yet completed. He wi again resort to constitutional measures. He will giv doses of colchicum, or such tonics or alteratives as th case seems to require, only bathing the affected ey with some cold spring water, to every pint of whic an ounce of spirits of wine has been added. Und such a system the eye may become bright: succe may seem to have been secured. But let not the e ultation be too boisterous. Three or four months pa over, and too often the disease again appears, ar attacks either the same eye, or perhaps the othe Specific ophthalmia often changes about from side

ide in a manner which is most annoying. This attack s got rid of with greater difficulty; after that another ollows: and the horse ultimately loses one eye or both. Hence comes the necessity of being aware of the races, oftentimes difficult to be detected, which this omplaint leaves behind it. The slightest cloudiness f the cornea will engender suspicion that the eye has ot been at all times right; and this will be confirmed f the eyes, or rather the openings of the eyelids, are lifferent in size: if one of the lids is thicker than the ther, and particularly, if towards the inner angle, there s a little puckering of the lid. There may also be a lim line around the cornea; perhaps a very minute nd scarcely detectable spot in the centre of it,—a aziness rather than a spot,—and faint lines radiating rom it. Where such signs are detected, the previous existence of ophthalmia is implied; and if the horse is roung he should be rejected, for in all probability he vill shortly suffer another attack of the disease. As pecific ophthalmia, however, is not generally seen in natured animals, if the horse be more than seven years ld, the above indications should be considered only as hey have affected the sight and deteriorated the value f the animal.

It is important to distinguish between these appearnces and those caused by a blow or other external njury. In the latter case, after the inflammation has ubsided, there is frequently left an opacity of a portion f the cornea, sometimes extending over half the eye. t will be found, however, that the internal parts of the ye are perfectly clear and free from disease; and that ision is only interfered with by the opacity, which on ex-

amination, is discovered to be confined to the conjunctiv
Sometimes, when the injury proceeds from the lash
a whip, one or two superficial streaks will be foun
across the eye, and the other parts perfectly clear. I
old cases of this description it is best to attempt nothin
medicinally, for the injury has become established; bu
when the case is recent, and all sign of inflammatio
has subsided, the white place may be lightly touched ov
with a stick of lunar caustic, or an ointment may be use
composed of a grain of cantharides to an ounce of lard

The natural course of specific ophthalmia is to involv
the capsule covering the crystalline lens; either this
the lens itself becoming wholly or partially opaqu
Such opacity is termed *Cataract*. The effect of it
either imperfect vision or, when the entire lens is in
volved, blindness—irremediable blindness; for if th
operation for cataract, which benefits the human bein
were successfully performed, and the lens removed, th
horse, not being fitted to wear spectacles, could have n
distinct vision; he would be deprived of that whic
refracted the rays, and regulated the picture of su
rounding objects on the retina.

A very considerable change has lately taken place
the opinion of veterinary surgeons on the subject
cataract. It is supposed to be capable of forming
much less time than was once thought to be possibl
It may appear, and become almost perfectly formed,
the space of from one to six days.

It is also ascertained that cataract may appear wit
out any previous active inflammation, without an
apparent disease of the eyes. It is now fully prove
that partial cataract, that is, slight specks or spots on th

ns or its capsule, do occasionally disappear. They are nly thus transitory, however, when they are of spon-neous origin, or spring from causes which are not to e traced. When they are the consequences of injuries r disease, the cataract is stationary, and never dis-ppears. If their appearance be spontaneous, mild con-itutional measures and local stimulants to the eye are ften successful. When they are the result of violence, hysic is injurious, or at best inoperative.

When a cataract supervenes after inflammation of the ye, it is generally the case that the inflammation does ot again recur; if the cataract should involve the entire ns of one eye, the other is generally preserved. So lso, if the cataract is partial, that is, if it admits some egree of vision, the eye is likely to remain in this state ver afterwards. This is indeed one of the most favour-ble terminations of ophthalmia: for too frequently we nd a general disorganization of the structure of the eye xisting either with or without cataract.

The chief inconvenience experienced from small ataracts, or partial injuries to the cornea, spring from eir rendering the horse's vision imperfect, and causing e animal to shy. Many a valuable steed is parted ith for this cause; and as either injury materially de-reciates the value of a horse, it therefore behoves horse-en to think twice before they strike an animal over e head, to indulge a temper which in the end may cost em rather dear.

With regard to specific ophthalmia, where the disease not hereditary, another attack may be prevented; and ven should it be inherited, some good will be accom-lished by attending to the ventilation of the stables.

The drains should be looked to, the height of the roo considered, and any dung or litter in the neighbourhoo ought to be scrupulously removed. Foul atmospher engenders ophthalmia; and there is nothing so preven tive to the disorder as pure air.

GUTTA SERENA, OR GLASSY EYE.

There is a species of blindness, which, although cannot in every case be traced to inflammatory actio ought to be noticed. The cornea is perfectly transpa rent, but the iris has lost its power of contracting: th pupil is permanently dilated, and the eye has a peculia bright and glassy appearance. This fixed condition the pupil is caused by loss of vitality in the optic nerve and as it is by means of this nerve that animals are ab to see, of course when its function is destroyed th horse is blind. This is frequently overlooked, and esp cially when confined to one eye. Gutta serena may the consequence of pressure on the brain. If a hor has had several attacks of staggers, and ultimate recovers, this species of blindness will often be left b hind, which no operation can remove, and which beyond the ordinary reach of medicine.

When, however, gutta serena, or amaurosis, is t consequence of any affection of a temporary character often disappears with the cause to which it owes origin. With the restoration of strength the sight co monly is restored; for weakness is a well-recogni cause of this affection. Exhaustion from fast driv may induce it; as also may excessive bleeding; linger disease or continued debility arising from any sour

Blows upon the head may also produce it, by inducing congestion of the brain, or effusion and pressure upon the optic nerve. Cart-horses are too frequently struck with the butt end of the whip upon the poll; and gutta serena is not rare among animals of this description. Such horses are predisposed to congestion, because of their loose and flabby structure. These horses are also very irregularly and badly fed; nothing more disposes to staggers than the too suddenly overgorging the stomach with food containing much water and small nutriment after long-continued fasting. The introduction of the nose-bag has greatly contributed to render this disease much less frequent than it used to be; but a change of diet and of treatment is required entirely to eradicate it.

CHAPTER VII.

INFLAMMATION OF THE TONGUE—BLAIN.

This disease is neither so frequent or so fatal with the horse as among cattle; but it does sometimes occur, and the nature of it is frequently misunderstood. The horse will refuse his food, hang his head, and a considerable quantity of ropy fluid will be discharged from the mouth. If the lips are closed, he resists the opening of his mouth to such a degree, that the suspicion arises the animal has locked-jaw. If the mouth is opened, it will require some force to close it; and this also will cause the idea of locked-jaw to occur to the mind

of the owner. The observation, however, that there
not the peculiar attitude and gait, which will hereafte
be described, as characteristic of locked-jaw, will forcibl
point out the distinction between the diseases.

Upon examination, the tongue will be found con
siderably enlarged; running along its sides, wi
be a reddish or dark-purple bladder, which sometime
protudes between the teeth. The salivary glands ar
enlarged, and the discharge from the mouth is ver
great; while the soreness of the swollen part causes th
horse obstinately to resist every motion of the jaws.

The cause of this inflammation of the tongue is un
known. Sometimes it seems to proceed from indiges
tion: in these cases the breath and the faeces are fœti
At other times it accompanies various inflammator
complaints. It is seen in violent catarrh, or epidem
fever or influenza. It is a frequent accompaniment
locked-jaw.

The cure of it is very simple—the bladder must b
cut through from end to end. There will not be an
great flow of blood; the tumour seems to be chief
filled with a red-coloured gelatinous fluid, which w
ooze out; after which, in the course of four-and-twen
hours, the horse will often be much relieved, if n
completely well. A dose of physic will remove th
stomach affection; and if any remaining fever be pe
ceptible, a few of the balls (Recipe No. 10, p. 4
will be useful after the physic.

If the disease is neglected, the bladder will bur
but corroding ulcers will remain; these being excee
ingly offensive, difficult to heal, and absorbing much
the tongue. The stench may be removed by a soluti

of the chloride of zinc. This will at the same time usually give a healthy appearance to the ulcers.

RECIPE (No. 11).

Solution of Chloride of Zinc.

TAKE—One drachm of the chloride of zinc, and dissolve it in three pints of water. Keep the bottle closely stoppered when not in use.

Should the wound seem to require anything else, the following possesses the property of bracing those parts to which it is applied. It may be used as a gargle, by raising the horse's head, and pouring a little into his mouth; then moving the head up and down, and ultimately letting go the hold, when the fluid will flow upon the ground, though it will do no harm if it should be swallowed.

RECIPE (No. 12).

Infusion of Catechu.

On two ounces of powdered catechu pour a quart of boiling water. Keep it in some covered vessel for an hour, occasionally shaking it: then pour off the clear liqour, and bottle for use.

Should both of these fail, the solution of common alum may be resorted to. It is a powerful astringent in these cases; but it sometimes renders the skin of the mouth so harsh, that the horse refuses his food.

RECIPE (No. 13).

Solution of Alum.

Dissolve two ounces of powdered alum in a quart of water, and keep it for use.

CHAPTER VIII.

INFLAMMATION OF THE PALATE—LAMPAS.

THE old remedy for this imaginary disease is eithe to fearfully burn or deeply scarify the horse's mouth The symptoms of lampas are the horse being off his feed The presence of the disease is, to the groom's satisfac tion, detected by the forward bars of the mouth being found upon a level with the upper nippers. In thi situation, they would always be found in young horses did the groom more frequently examine them.

Lampas, however, is in fact a purely imaginary disease. It is seen only during the period of the per manent teeth being cut; and that which is viewed as malady, is nothing more than the table of one of th temporary molars being cast off. This is the regula process of shedding these teeth, which are chiefly absorbed; of course the horse refuses to feed as usual while the organs of mastication are irregular and im perfect.

But how is it the application of the firing-iron to the roof of the mouth, appears to cure? Why, of course the horse with a piece burnt out of his palate cannot be expected to feed. The groom is content the anima should for a time reject his provender. Time is gained when the mouth has healed, the molar has thrown off the shell of the temporary teeth, and the horse can eat as usual.

Such is the termination of lampas; the horse would have got well, and even have been better, had his

nouth not been pierced by a lancet, or a heated ron. When a groom informs his master that an animal ias the lampas, the best and wisest thing the proprietor an do is to throw up the services of the horse for a ime.

CHAPTER IX.

NFLAMMATION OF THE MEMBRANE OF THE NOSE—CORYZA.

THE essence and nearly the whole of every cold, at its commencement, is inflammation of the membrane of he nose. It is characterized by redness of that membrane; increased discharge from the nose; weeping from he eyes; a little general heaviness, and a slight degree of fever. It is that which a warm mash or two; a comfortable stable, and warm clothing will frequently remove without any medical treatment; but which, if neglected, degenerates into catarrh, cold, sore throat, or inflammation of the lungs. There is, however, affecting the nose and involving also other parts, another disease of a very singular nature—it is truly a specific one, and demands most serious attention.

CHAPTER X.

GLANDERS.

THIS is a sad and intractable disease: it destroys housands of horses every year. At its commencement

it seems to be confined to the membrane of the nos which is not characterised by the usual florid red i flammation; but by a leaden or purple colour, sometim of a very pale hue, and generally so at the commenc ment. This is accompanied with a very slight discharg from the nose; generally from one nostril only, an that very frequently the left one. At first it ca scarcely be distinguished from the natural moisture the nose,—it is thin and transparent like it. It seem to be the natural moisture a little increased in quantity It may continue in this deceitful state for many week or months, and even two or three years. There ma be no cough; no loss of appetite; no apparent illnes of any kind; scarcely any enlargement of the gland beneath the lower jaw; yet the horse shall b glandered, and capable of communicating the in fection.

By degrees the disease proceeds. The discharg becomes decidedly, although to a very slight exten increased; but it is still watery and transparent, and i to be distinguished from the natural secretion only b a slight degree of stickiness when it is rubbed betwee the fingers. It is also distinguished from the discharg of catarrh by this stickiness, and by its being constant not at one time almost ceasing, and at another bein poured forth in large quantities. The glands beneat the jaw sympathise with the membrane of the nose they enlarge, and the horse is what the stable-man cal *jugged*. The kernels may swell in catarrh; but th enlargement characteristic of glanders is distinguishe by the glands not being hot and tender; more pa ticularly by the glands seeming to adhere to the inne

side of the jaw-bone. They are hard, firm, and the altered condition which they exhibit is unattended by any enlargement of the surrounding parts.

By degrees the discharge increases; it becomes more adhesive; it sticks about the nostril; it is still often confined to one nostril, and the hardened gland is found on that side alone. It is now, perhaps, recognised for the first time, by the owner of the horse or his servants; but the mischief has been done—it is highly probable that no medical care can now save the animal, and he may have propagated the disease among his companions.

Hence the necessity of attending to the very earliest symptoms of this complaint; seriously regarding the slightest increased discharge from the nose, or altered colour of its membrane—whether it be accompanied by enlarged submaxillary glands, or even if no tumour can be detected.

The disease may be long stationary. Entire teams of these horses draw waggons, or are employed upon the roads; they outwardly seem to work well for months and years. This should not be permitted, for the contagion of glanders is often widely spread by such means.

In the next step the discharge is rapidly augmented; from being mucous or glairy, yet transparent, and always without smell, it becomes purulent, opaque, and yellow. If the nose is then examined, chancres are seen upon the membrane of the cartilaginous septum between the nostrils. They are plainly not the excoriations which are sometimes observed in violent catarrh, but they are small, distinct, circular ulcers, with ragged

edges surrounding surfaces which look sore, but want the red, even, vascular or purulent aspect of ordinary wounds.

Even after this the horse may for a while retain his condition, appetite, and capability for work; but the period is uncertain, and generally short. The constitution begins to be affected. The virus empoisons the whole frame. The horse loses flesh, appetite, and spirits; the coat is pen-feathered; the skin is harsh, and clings to the bones. The inflammation extends down the windpipe, and the lungs become affected; a hollow cough bespeaks the mischief which is going on within the chest. The ulcers extend in the nose; they become larger and more numerous; the membrane thickens; the nostrils and the whole of the external openings swell; the air passages are impeded; the horse is threatened with suffocation; and a grating noise attends every act of respiration. The discharge from the nose is increased; blood mingles with it; it assumes various colours; scabs, or pieces of cartilage, or even of bone are cast forth. Now it is that stench, which before, during the earlier stages, was absent, is powerful and offensive. Symptoms of farcy appear. Ulcers break out in various parts, and the animal at length dies apparently from suffocation.

This is the usual progress of the disease when it is bred in the animal, or produced by bad stable management; but there is another species of the malady, termed, from the rapidity of its progress, the *acute* glanders. When the disease is communicated by inoculation, its march is sometimes fearfully quick. The disease is the same; but the peculiarity consists in

the violence of the symptoms, and the rapidity with which they succeed to each other.

Sometimes, after the disease has proceeded slowly for many a month, the complaint all at once takes on the acute form, and speedily destroys the animal.

Glanders may thus be produced by various causes; such as contagion; exposure to a foul atmosphere; hard work; poor feeding, and by anything which shall weaken the constitution.

The treatment of glanders is very unsatisfactory. There are cases on record in which horses appear to have been cured by every variety of treatment; and there are some instances of animals recovering when all medical treatment was neglected. It is very probable that, in every reported cure of glanders, nature did a great deal more than medicine.

The method, however, which has oftenest succeeded, is that of strengthening the constitution against the continued influence of the disease by the administration of stimulating food and tonics. The following ball has often been serviceable; and it has sometimes apparently cured the horse, but far oftener has stayed the disease for a time.

RECIPE (No. 14).

Ball for Glanders.

TAKE—Sulphate of copper (blue vitriol) powdered, from half a drachm to a drachm: or sulphate of iron a drachm to two drachms;
Cantharides finely powdered, five grains;
Ginger and gentian, of each a drachm;
Palm oil, sufficient to make a ball.

One of these balls should be given morning and night

for a fortnight; and then daily as long as may be necessary. Or the constitutional treatment recommended in the next chapter for farcy may be adopted. Some of the relapses after the seemingly successful treatment of glanders may be explained by the inveteracy of the disease.

Green meat will always be a valuable auxiliary in the treatment of glanders, whether the horse be in the stable, or turned out to grass; but at the same time a full allowance of oats and beans is highly requisite. However, it must not be forgotten that the disease is notoriously contagious; and every horse, suspected of being affected, ought to be kept where he can have no possible communication with other animals.

Care should be taken that the hands of the person who administers the balls are perfectly sound, for the disease is unfortunately as dangerous to the human being as to the horse. The most prudent method would be never to ball a glandered horse without the balling-iron and gloves.

What, then, is the practitioner to do when consulted respecting a case of glanders? Unless the disease is in a very early stage, or the animal is young and of a good constitution—the pulse not higher than forty-five—the condition fine, and the general symptoms encouraging—the best advice he can give is, at once to destroy the horse. The first loss will probably be the least.

If, however, the owner wishes medical treatment should be adopted, let the animal be removed to some place where he can be secure and alone. If in the stable the glandered horse originally inhabited there were other horses; let these be brought out one by one, and

carefully examined. They ought not to be driven out all at once lest confusion arise; any that exhibit a symptom which is suspicious should be put apart by themselves. Those which are hopelessly diseased should be sent in an opposite direction to be slaughtered; those that have confirmed glanders, but may be worthy the hazard of a cure, despatched another way; and those that are apparently not glandered put into a fresh stable; but not allowed to communicate with each other, lest the disease should after a time be developed in one, and the remainder become inoculated. The stable must then be looked to before the horses are allowed to re-enter it; but on this subject ample directions will be given presently.

In the course of medical treatment, the practitioner should never be induced to practise cruelty. Operations of every kind have been attempted, and the absurdity of most of them clearly demonstrated. No injection through a hole bored in the forehead can possibly be of service—for it can only be brought into contact with a very little portion of the diseased surface. If a mild application, such as a very weak solution of the sulphate of iron or the chloride of zinc, be cast up the nostril, it may do some good; but irritating lotions can only add to the inflammation, and increase the sufferings of the animal, adding intensity to the disease.

When considering glanders, however, it may be truly said prevention is better than cure; for after it has been apparently cured, the disorder has frequently returned; and the practitioner will be best able to prevent the disease when he thoroughly understands

the nature and cause of it. It is in its nature a constitutional affection, the earliest perceptible symptom of which is traced to the nose. The disease, however, is in the system; and not confined to the part where it earliest announced its existence. In very many particulars, glanders is closely allied to consumption in the human being; for the lungs of the glandered horse are generally found tuberculated, and the disease is the wind-up of an exhausted constitution. Neglect on the part of the horse-owner is by far the most frequent cause of glanders. Foul stables, bad food, and excessive work, will always in the end start up this pest. The postmaster generally knew it too well – the barge-horse is commonly its victim. Among the cabs and omnibuses of London the disease is by no means a rarity. During a campaign, glanders is to the horse a fearful enemy. Among the cavalry kept for home service the disease is unknown. In the better class of stables it is sometimes seen; but only in rare and solitary instances, which can be traced, in the majority of cases, to contagion. Where the horse is hardly worked, poorly housed, and badly fed, glanders becomes, as it were, the possessor of the building. The three causes conjoin to produce the one effect. Either of them singly would be sufficient; but, when they act together, so virulent is the disease, that a particular place seems to breed the disorder; every animal that enters it is sacrificed. Until each of the three causes has been removed no change can be expected. Formerly, the evils were amended, one at a time. The food, perhaps, was improved – but no good resulted; then the work was decreased—still the horses failed – and lastly, the stables were attended to—yet it

was found the disease was not checked. Hope, then, was abandoned, and superstition took its place. The spot was thought to be the birthplace of contagion, and everything it contained was supposed to be infected. Destruction went to work. Horses were slaughtered; the buildings were pulled down, and all which they contained was burnt. This was sad folly. There is no occasion for such ruthless waste. If glanders appears constantly in a stable, let the proprietor set to work resolutely, and the disease may be conquered.

In the first place, the horses must be inspected. The food must then be improved, the stable management amended, and the work diminished. After this has been done, or at the same time, the building must be surveyed. The drains must be cleared, and the ventilation must be especially considered. The harness, &c., must be well washed and thoroughly cleansed. With regard to the stables, the whole of the interior should be first scraped and then saturated with water. After that every crevice should be stopped, and the place should be subjected to the action of chlorine gas. The easiest means of doing this is to place a saucer over a lamp. The saucer should contain sulphuric acid and common salt. The lamp being lighted and the saucer properly supported, the light ought to be placed beneath it, when chlorine will be given off in abundance. The fumigation ought to be twice repeated on different days, and after that the pest will, supposing all to have been well done, be entirely destroyed.

CHAPTER XI.

INFLAMMATION AND ULCERATION OF THE SUPERFICIA ABSORBENTS.—FARCY.

In the Cattle Doctor I have described the absorbent as vessels which are distributed to every surface an every part of the body: they are carrying away th worn-out portions of the frame, or the fluid that fil any cavity—and are doing this for the purpose of co verting them again into nutriment, or of expelling ther These vessels follow the course of the veins, and ar like them, furnished with valves; so that, amidst th action of the muscles, the fluid never retrogades, b pursues its forward course to its proper destinatio In proportion as the body is weakened, so is the depo decreased, and the absorption increased. If, therefo from confirmed weakness, the absorbents have more do than they are capable of performing, some of the become clogged. The current which should be co stantly flowing is stopped, and the fluid being stagna degenerates. Inflammation commences, and there formed little tumours which suppurate, burst, a ulcerate.

The absorbents on the surface of the body are Farcy most affected: where they are diseased there to be seen small hard cords running along under skin by the side of the veins; while, at certain tervals, there are small tumours or knots (far buds) which break, and small ulcers (farcy-ulc remain.

These buds have some resemblance to the patches on the skin which are known by the name of surfeit; but they may readily be distinguished from them by their hardness, by their running in lines, and also by their excessive tenderness.

By degrees the deeper-seated absorbents are involved while the debility naturally induces effusion, and there result painful swellings of the limbs. The disease often commences in, and is sometimes altogether confined to, one of the hind limbs; at other times the head and the muzzle are first affected; there is then swelling of the muzzle, and a discharge of offensive matter from the nostrils. The characters which it assumes are various, and often puzzling; but, during the whole course of the disease, the horse is hide-bound, losing flesh and strength; he ultimately dies a mass of corruption.

Farcy is, like glanders, contagious. It usually runs its course more speedily than glanders, although sometimes, like that malady, it lurks long in the frame before it produces its destructive effects. It is nearly always present during the latest stages of glanders; and it is essentially the same disease, but under a different form.

Although it is thus identified with glanders, it is somewhat more manageable than that complaint. There are very many cases of the apparent recovery of the farcied horse, and not a few in which the disease has been permanently eradicated; but it is only when it is confined to the corded absorbents, or superficial ulcers, that it admits of cure: when the body generally is involved, or the constitution is implicated, the case is as hopeless as that of confirmed glanders.

The treatment is both local or constitutional. The first consists in the dispersion or destruction of the farcy-buds and the healing of the farcy-ulcer. The method of procedure in order to accomplish this is simple enough. The tumours must be opened and the pus which they contain evacuated. They should be freely divided with a knife, and then the budding-iron, at a black heat, applied to the internal surface. When the disease is ascertained, the buds should always be opened and cauterized as soon as they appear. It will be useless to attempt to disperse them by any embrocation or discutient fluid. When they have been thus opened, some stimulating liniment may be applied; and the sores treated with an ointment composed of a drachm of the diniodide of mercury to an ounce of lard; or the ulcers may be washed with a solution of the chloride of zinc.

RECIPE (No. 15).

Lotion for Farcy.

TAKE—Half an ounce of chloride of zinc, and dissolve it in four quarts of spring water.

The ulcers should be freely bathed with this lotion morning and night.

The constitutional treatment will consist in the administration of tonics, in order to support the system.

RECIPE (No. 16).

Ball for Farcy.

TAKE—Corrosive sublimate, ten grains;
Powdered gentian root, two drachms;
Powdered ginger, one drachm;
Oak bark in powder, half an ounce;
Make the whole into a ball with palm oil.

This ball should be given morning and night for a fortnight. If advantage then appears to have been derived from it, the quantity may be gradually increased to fifteen grains of the sublimate in each ball; but the horse must be carefully watched, lest salivation or violent purging should be produced; the instant either is perceived, the mercurial balls must be discontinued. In salivation the mouth should be frequently washed with the solution of the Epsom salts, an ounce dissolved in a pint of water, and a drachm of sulphuric acid should be mixed with every pail of water from which the horse drinks. When farcy is present, purgatives are not proper, and must not be given.

If much purging and griping have been produced, let plenty of thick starch or arrow-root be horned down, and the following drink given morning and night:—

RECIPE (No. 17).

Drink for Purging from Corrosive Sublimate.

TAKE—Powdered opium, two drachms; prepared chalk, two drachms; liquor potassæ, one ounce: mix and gradually pour to them half a pint of thin cold gruel.

If two days should pass and the purging not be relieved, continue the starch and arrow-root, and give the following drink:—

RECIPE (No. 18).

Astringent Drink.

TAKE—Prepared chalk, an ounce;
Powdered catechu, two drachms;
Powdered opium, one drachm;
Powdered ginger, one drachm;
Powdered oak bark, half an ounce.

Rub them well together, and gradually add a pint of thin gruel. This mixture should be given morning and night until the purging begins to cease.

If, after a fair trial of the corrosive sublimate, no benefit seems to have been obtained, recourse should be had to the sulphate of copper (blue vitriol).

RECIPE (No. 19).

Another Ball for Farcy.

TAKE—Blue vitriol, one drachm;
Powdered gentian, two drachms;
Powdered ginger, two drachms;
Powdered oak bark, three drachms;
Palm oil, sufficient to make a ball.

This ball may be given morning and night, and continued with perfect safety as long as may be deemed necessary; but if, after the trial of a fortnight, no ground has been gained, the ball may be changed for the following:—

RECIPE (No. 20).

Another Ball for Farcy.

TAKE—Powdered sulphate of iron, two drachms;
Powdered cantharides, ten grains;
Extract of gentian, half an ounce;
Tincture of capsicum, half an ounce.

Dissolve in a quart of stout, or strong ale, and give night and morning.

In farcy, even more than in glanders, green meat is necessary; and if the horse can be turned on spring grass, or into a salt marsh, it will always be productive of temporary benefit at least. A run at grass should always be accompanied by even more than a full allowance of oats and beans.

A medicine called diniodide of copper has been used with some success in farcy, and in discharge from the nostrils resembling glanders. The dose is from half

drachm to a drachm and a half, combined with gentian and other vegetable tonics, and given once a-day. The ointment of iodine has also been rubbed on the corded swellings with advantage.

CHAPTER XII.

INFLAMMATION AND SUPPURATION OF THE CELLULAR SUBSTANCE UNDER THE JAW—STRANGLES.

STRANGLES is a disease from which few young horses escape.

At some time, usually between the third and fifth year, the colt will be out of condition and spirits, and have a slight husky cough; the appetite will fail; there will be occasional discharge from the nose, and weeping from the eyes; he may continue in this state for several days, or even during some weeks; not decidedly ill, but evidently far from well. The horseman when he sees a young animal thus affected, says that the colt is "breeding the strangles," and he is generally right.

The owner suspects the real nature of the disease on account of the age of the animal; the appearance of some purulent matter with the discharge from the nose and sometimes the drivelling of thickened ropy saliva from the mouth; the continuance of the fever after the nasal discharge has fairly set in; cough, sore throat, and general lassitude more marked and of longer duration than is common to ordinary catarrh.

The cough becomes at length more troublesome, and

the nasal discharge and weeping increase, until a fulness appears under the lower jaw, and occupies the channel. It is hot and tender; the swelling increases until it assumes the form of a defined hard tumour in the centre of the channel, and along the course of the parotid glands. The breathing now becomes distressed; it is sometimes almost suffocating. The tumour increases; at length it comes to a head or points; if suffered to take its natural course, it bursts, and a considerable ulcer remains; but, after the matter has fairly run out, the ulcer speedily heals, and the colt is well. The disease is essentially marked by *the formation and suppuration of a large tumour beneath the jaw.*

If the proprietor of the horse does not too much intermeddle, it is rarely that much danger attends on strangles. Some weakness may remain; but that gradually disappears, and the colt enjoys far better health than he did before.

There should be no bleeding while strangles is coming on or the tumour is forming; nor should any physic be administered; mashes and green meat being depended upon, if the animal be costive; and the quantity of corn ought not to be much diminished. Bleeding or physicking will only weaken the colt, and retard the progress of the tumour, or possibly prevent its coming to maturity.

As soon as the fulness under the jaw is evident, the progress of the tumour should be hastened by the application of stimulants to the part. There is evidently a struggle going forward between nature and the disease, while the tumour is proceeding to suppuration; and the duration of this produces that exhaustion aft-

trangles, which sometimes alarms, and is not always peedily removed. The object, therefore, should be o promote the process of suppuration, by which the lisorder is terminated and the animal relieved.

Many persons employ fomentations to the part. The ffect of these is doubtful. The hair cannot always e perfectly dried after the fomentation has been used, nd the cold produced by evaporation from the damp urface will do more harm than the warmth of the omentation had done good. Warm linseed poultices, requently and carefully applied, are certainly the est domestic remedy that can be used. In ordinary ases, particularly if the animal is very young, the hroat should be blistered as soon as the tumour begins o be formed. The suppuration will be accelerated by nany days, and much expenditure of strength will be aved. A slight blistering application may even be pplied when poultices are also adopted.

There are few things more disgraceful in the farrier's Pharmacopœia than the composition of blister ointment. t would almost seem as if the object were to torture nd permanently blemish the animal: for euphorbium, nd oil of vitriol, and corrosive sublimates are often ound in the vesicatories of the farrier. The common lister in general use has the Spanish fly alone for its asis. The following is the recipe:—

RECIPE (No. 21).

Blister Ointment.

TAKE—Spanish flies, one pound, and reduce them to fine powder; elt together, palm oil, seven pounds, and resin, one pound, and when ey begin to cool, add the flies, continuing to stir the mass until it cold.

This ointment, if well rubbed in, will always vesi-
cate, and very rarely blemish.

After the blister has acted, and the tumour is rapidly
coming forward, is it to be suffered to take its natura
course and break, or should the escape of the pus b
hastened by the knife? No good could accrue did w
let the pus increase and by pressure cause absorption
the skin, leaving an ulcer which, when healed, migh
establish a permanent blemish; and such probabl
would be the result of the spontaneous bursting of th
abscess. As soon, therefore, as a tolerable quantity
fluid can be detected, by its fluctuating under the pre
sure of the fingers, or the skin begins to be prominen
and soft in some part of the swelling, the knife shoul
be used. The incision should be of a fair size pro
portioned to the magnitude of the enlargement; tha
all the pus may escape and the orifice be in no dange
of closing before the matter is discharged. The
should be no squeezing of the tumour, in order to for
out the fluid; and the nasty practice of inserting th
finger and raking it about should never be indulged
but a poultice should be applied, and when the di
charge has ceased the wound should be dressed wi
the solution of the chloride of zinc.

The horse will usually begin to mend as soon as t
abscess is opened; yet the owner must not be in t
great haste to open it. The matter should be suffer
evidently, and in some quantity, to form. If t
tumour be opened prior to this, the suppuration will
delayed, and, in some cases, altogether prevented: t
horse will then linger on, neither sick nor well, for
long time; he will never after thrive so thoroughly

when, by a copious discharge from the abscess, he has got rid of that which was preying on the constitution.

The medical treatment of strangles will depend on the degree of fever that accompanies the formation of the tumour. It is a rule almost without exception, that a horse should never be bled in strangles. The acceleration of the pulse and heat of mouth, which usually accompany the disease, even if they are well marked, are best combated by gentle stimulants, such as a handful of beans or a little scalded malt. Mashes should always be given to open the bowels, and green meat if it can be obtained.

If there should be very violent fever, purgatives are quite unnecessary during the active stage of the disease; and after the crisis has passed no physic must be administered under the idea of removing lurking tumours. Good nursing and nourishing diet will, in the latter case, be requisite to counteract the debility which the disorder has left behind.

The weakness which sometimes accompanies the latter stages of strangles, or remains when the disease has passed, may, in most cases, be left to the slow but renovating power of nature. If, however, the weakness should continue or increase, or be accompanied by evident loss of flesh, malt mashes, green meat or carrots, will be serviceable, with two or three feeds of corn daily: nevertheless it should not be forgotten that too much hard and stimulating food would be dangerous, and the judgment must be exercised to proportion the quantity to the necessity.

Should the weakness continue, a few tonic balls may be administered.

RECIPE (No. 22).

Tonic Balls.

TAKE—Sulphate of iron (green vitriol), two drachms;
Extract of gentian, three drachms;
Ginger, two drachms:
Make them into a ball, and give one daily.

Where the trouble of making fresh poultices i objected to, a very good substitute is formed by soakin a wisp of hay in boiling water, and applying it to th part; and it is by no means a useless resort to fill nose-bag with scalded bran, and to hang it on the horse head, as the inhalation of the steam favours the di charge of strangles.

CHAPTER XIII.

INFLAMMATION OF THE GLANDS AND THROAT.

IN every case of severe catarrh, and frequently even milder cases, the glands of the mouth and throat affected; they will become hot, swollen, and tend This may be evident externally, or will be shown the horse *quidding his food;* that is, dropping from his mouth partly chewed, as well as by the ani gulping the water when it drinks; because when th glands are enlarged, digestion is painful.

In common sore throat the gland which, by its creased size, first attracts attention, is the *parotid gl* In its healthy state it reaches from the root of the to near the angle of the lower jaw, and is not, to generality of persons, very conspicuous; but when

a little enlarged by inflammation, it can plainly be seen; giving an awkward appearance to the juncture of the head and neck.

The horse, for inflammation of the glands, should be treated as described under the article CATARRH; bleeding is never required, but the animal should have sedative medicine according to the degree of suffering which accompanies the sore throat. The head and neck should be covered with a hood; and the following embrocation should be well rubbed in, reaching from ear to ear, extending over the greater part of the channel, and about three inches down the windpipe.

RECIPE (No. 23).

Embrocation for Sore Throat.

TAKE—Common liquid blister, two ounces;
Hartshorn, one ounce;
Olive oil, one ounce;
Oil of origanum, one drachm;
Shake them well together.

RECIPE (No. 24).

Strong Liquid Blister.

TAKE—Spirit of turpentine, a gallon. Pour the turpentine upon ne pound of Spanish flies, coarsely powdered. Let the flies macete a month, daily shaking them; then allow the liquid to remain ationary one day, and pour off the clear fluid for use.

The last recipe will be the liquid blister in its rongest form, and such as will very rarely be required: hen a blister is mentioned in the course of the work, e common liquid blister is alluded to, unless otherwise rticularly directed.

RECIPE (No. 25).

The Common Liquid Blister.

Spanish flies, in coarse powder, one part;
Olive oil, eight parts.

The embrocation (Recipe 23) should be applied morning and night until considerable scurfiness appears around the gland.

In a few cases, however, the gland will continue to enlarge until suppuration takes place. This is a serious business, and requires the attendance of a skilful veterinary surgeon. The abscess must be promoted as much as possible by the use of the embrocation aided by poultices. Only when it fairly points, ought the knife to be introduced; and even then care should be taken not to puncture the body of the gland.

Sometimes the duct of the parotid gland is opened and it is often impossible to close the wound. The saliva escapes and jets forth when the horse is feeding. The animal becomes unsightly; and the loss of the fluid, which mingled with the food, and was designed to aid digestion, is injurious to the health. A blister round the orifice should be first tried; liquids such as gruel constituting the food, in order that the jaws may not be moved, and by their motion prevent the part uniting. The blister having failed, a false opening has been made into the mouth, or the gland itself has been intentionally destroyed. We make no mention of the budding iron, because it is a destructive instrument and it never ought to be seen in humane or scientific hands. Far less ought so dangerous an application to be used by the professional man upon the property of other people. His duty is to do no harm, if he can

no good; and happily a mode of cure for fistulous parotid gland has been discovered, which promises to fulfil all the intentions of the very best surgery. A very little liquid blister is used to aid the knife in removing all the schirrus round the opening. This being accomplished, a pledget of lint is put upon the orifice; and this is forcibly retained in its situation by means of short pieces of darning cotton passed over it. The ends of the cotton are made firm by the application of collodium; which is nothing more than gun-cotton dissolved in ether. The heat of the body causes the ether to evaporate, leaving behind the gun-cotton, which forms an admirable glue. This excellent mode of curing fistulous parotid was the discovery of Mr. T. W. Gowing, of Camden Town, to whose genius veterinary science is so much beholden. Of course when the last method is pursued, the horse's head is tied up, to prevent him rubbing the part against the manger: and the animal is barely supported upon liquids, to render unnecessary the movement of the jaw.

The other glands which supply the mouth with saliva will also generally share in the inflammation of the parotid. The *submaxillary* glands from close approximation will be oftenest affected. It is very rarely indeed that the horse has cold without the lymphatic glands in the channel being implicated. If these last are neither very large nor very tender, it will be best to let them alone. The swelling will subside when the cold or fever is removed. Should they, however, attain a considerable size, and remain under the name of

VIVES,

the embrocation (Recipe, No. 23, p. 77), may be as well rubbed in.

These indurated glands will generally be dispersed by the application of an embrocation like that recommended; if, however, it should fail, a little of the following ointment should be rubbed in daily.

RECIPE (No. 26).

Iodide of potassium, one drachm;
Lard, one ounce.

In very obstinate cases, it may be assisted by the internal administration of a drachm of the iodide of potassium given every day in a ball.

BARBS OR PAPS.

The submaxillary glands, by two small teat-like bodies, open into the mouth, on either side of the bridle of the tongue. When there is much inflammation of the glands, the terminations to the ducts enlarge and their increased size may cause them to be slightly excoriated, and to appear like diminutive swellings.

The proper way to treat those swellings is to combat the inflammation which produced them, giving a laxative with some sedative medicine; and, if necessary, putting the animal on low diet: as soon as the inflammation begins to abate, the barbs or paps will greatly diminish and all will be well. No ointment or lotion should be applied to them; for the cause ceasing, the effect will presently disappear. The farrier who proposes to cut or to burn them off shows the most disgraceful ignorance. He will not only put a noble animal to much

unnecessary torture, but the new inflammation which ie will produce in the part may close up the orifices of the ducts. The secretion of the saliva, nevertheless, would go on: and if it cannot be discharged into the mouth, it must accumulate somewhere; and, in consequence of the accumulation causing pressure, the duct will ulcerate: and under the jaw will be formed a fistulous wound which the practitioner will be sadly puzzled to get rid of.

GIGS, BLADDERS, FLAPS.

These are names for enlargements of the openings of numerous little glands under the tongue and within the cheek, whose function is the production of the saliva. They too, sometimes, being affected by adjacent inflammation, become enlarged, and look like little pimples scattered about the mouth. In most cases nothing should be done to them; or, if anything, the Infusion of Catechu (Recipe, No. 12, p. 55), or the Alum Wash (Recipe, No. 13, p. 55), may diminish the swelling, and heal any little ulcers that may exist.

SORE THROAT.

This affection frequently is present as a symptom of other diseases; but sometimes it exists by itself, or seems to be an independent disorder. Beside being off his feed, the horse coughs; gulps the water as he drinks, a portion of the fluid returning by the nostrils: —in the stable the animal is continually swallowing his saliva, each act of deglutition being well marked or accompanied with a sense of effort. The space which lies between the mouth and gullet, as well as also

between the nostrils and the windpipe—the intermediate part where the respiratory and digestive tracts meet and cross one another, is inflamed—tender—perhaps ulcerated and painful. All the air entering the lungs, and all the food taken into the stomach, must pass through this affected part, which is technically called the fauces. It can have no rest, and would seem to be therefore, almost incapable of cure. Fortunately, however, sore throat, though here for the purpose of arrangement treated of as a distinct disorder, is not often met with in an isolated shape. When it does appear in such a form, it depends generally on digestive derangement. A mild physic-ball and soft food with a warm box will generally settle the business. If it is obstinate a blister may be applied, and even a seton inserted under the throat; and, after the bowels have been opened, a few fever or sedative balls may be given. When all irritation is subdued, a tonic ball night and morning to strengthen the stomach will be of service.

In all cases of sore throat the nose-bag will be found exceedingly useful. In common cases, scalded bran may be sufficient. It should be almost or quite at the boiling temperature, the bag, however, being sufficiently deep to secure the muzzle of the horse from being scalded. In bad cases, and attended with much difficulty of breathing, fresh yellow deal shavings may be used instead of bran.

LARYNGITIS.

At the top of the windpipe there is a cartilaginous box called the Larynx. This part is lined by muco

membrane, which is characterized by its extreme sensibility. The smallest particle of dust getting upon his irritable membrane will cause the most violent coughing; and inflammation is attended with not only excessive pain, but very acute symptoms. The breathing is affected; the glands are generally enlarged—the cough is frequent and painful—the horse resists if any attempt be made to touch the throat. The pulse is sharp and quick—the membranes are more red than in health, and an audible sound may accompany every inspiration.

No time should be lost in combating this disease, which, if neglected, may either involve the lungs, or may become settled, and produce roaring or chronic cough. The horse should be bled from the jugular, six or eight quarts being taken away: the largeness and leanness of the animal warranting the greater quantity. A physic-ball should be given, and fever medicine combined with sedatives administered. The following will answer very well:—

RECIPE (No. 27).

TAKE—Extract of belladonna, one drachm;
Aloes, one drachm;
Calomel, a scruple;
Nitre, two drachms;
Tartar-emetic, half a drachm:

Make into a ball with linseed meal and honey, and give night and morning.

The throat should be blistered, and the counter-irritation may be carried down the front of the neck. A seton ought to be inserted under the jaws, and the nose-bag with deal shavings should be employed as

directed for sore throat. The general mode of treat ment pointed out in the previous affection, in fact should in this disease be followed.

CHAPTER XIV.

BRONCHITIS—INFLAMMATION OF THE BRONCHIAL TUBES.

THIS disease consists of inflammation of the mem brane lining the air-passages of the lungs; and i generally accompanied by a similar state of the wind pipe and the larynx. It is produced by the sam causes as a common cold; and not unfrequently is th extension of inflammation from the throat downward It is often a very insidious disease; though sometim slight, and free from danger. It frequently creeps o so gradually that it fails to attract attention until t late. It is not uncommon for a cough and a slig diminution of the appetite to be the only symptor noticed for several days; although, if the animal we examined at this stage, he would be found to have quickening and a disturbed pulse with slightly laborio breathing. A discharge from the nostrils is also early symptom. The disease, after creeping on in t manner for several days, sometimes exhibits on sudden the most dangerous symptoms; the pu being exceedingly quick and weak; the respirat greatly accelerated; the membrane of the nostrils a eyelids of a red colour, and the discharge from

nostrils diminished or suspended. When bronchitis presents itself in this form, it is very commonly fatal—the membrane of the nostrils becomes of a purple hue, and death too frequently closes the scene in the course of a week or ten days.

The disease fortunately does not always exhibit itself in this severe form. We often find the first symptoms are a loss of appetite, dulness, discharge from the nostrils, and cough; it can only be distinguished from a common catarrh by the quickness of the pulse and the disturbance of the breathing. From common inflammation of the lungs it may be distinguished by the warmth of the surface and the extremities which usually prevails, and by the more moderate acceleration of the pulse and respiration. It should, however, be observed, that it is by no means uncommon for this disease to be complicated with inflammation of the lungs; and when such is the case it is the more dangerous. It is sometimes attended with costiveness; the dung being often offensive, and coated with mucus; and yet the membrane lining the bowels is so irritable as to be violently acted on if physic is administered. On applying the ear to the chest, instead of the healthy murmur, we generally hear a wheezing or sucking sound, sometimes one resembling brickbats being rolled down from a considerable height is audible, owing to the air struggling with the mucus; but this, of course, will depend very much on the quantity of this secretion which is effused. The breath is warm, and the mouth usually hot and dry.

There may be a seeming necessity for bleeding; yet, violent as the symptoms may appear to be, the

patient will not often bear the loss of blood: here, therefore, more than in any other disease, will appear the propriety of the caution which was recommended when treating of the operation of bleeding. No fixed quantity should be abstracted. The operation should never be left to the assistant or the servant, but should take place under the practitioner's own eye, in order that the bleeding may be immediately stopped on the very first indication that the system is affected. There is no rule which admits of so few exceptions as this, that a disease of the mucous surfaces (and this is one) requires prompt and decisive treatment; but at the same time very cautious remedies, from the rapid debility which is connected with all these affections.

Perhaps after all it is better bleeding should altogether be abstained from. Such a bloodletting as we dare hazard in bronchitis is not likely materially to affect the disease; while the smallest abstraction of the vital fluid is sure to tell with dangerous (perhaps fatal) certainty during the subsequent debility.

Although it will be desirable to relax the bowels aloes will be dangerous, except in the quantity of one or two drachms, and not repeated; but it will be better to substitute a pint, or nearly so, of linseed oil guarded by a drachm of chloroform, and to assist its action by glysters if there is costiveness.

Sedative medicine, such as the fever-ball, should be given twice a-day; and after the severity of the inflammation is in some measure diminished, setons or rowels may be inserted in the brisket.

The liquid blister rubbed upon the throat down the course of the windpipe and upon the chest will, after

the first symptoms have abated, often be attended with the best effects.

Mashes, gruel, or green meat, should constitute the only food of the horse; and even these should be offered in limited quantities.

The disease of the lungs, however, will not always thus decidedly attack the bronchial tubes alone; it will more often have a diffused character, and be connected with the inflammation of other parts.

CHAPTER XV.

EPIDEMIC CATARRH—MUCOUS FEVER—DISTEMPER—INFLUENZA.

This disease is not at all times distinguished by any common and characteristic symptom; but strangely differs in different years and seasons of the year; it has a great variety of names, and has been subject to a greater variety of treatment.

The attack is usually sudden, and may appear during the night. It at first simulates the commencement of catarrh:—the horse shivers; the pulse is generally weak and not always quickened; the mouth is hot; the coat stares; the belly is tucked up; the membrane of the nose is red; the eyes are red and weeping; the appetite fails; the flanks heave; and there is more or less cough.

This may be mistaken for cold; perhaps at the beginning it is nothing more. It cannot be inflam-

mation of the lungs, for there are no deathly-cold ears or feet: in general the extremities are hotter than usual. One general symptom, however, forbids its being confounded with pneumonia. Early in the attack swellings appear. The eyes are watery and the lids, half-closed, are enlarged. The legs and joints are often increased in size, and motion is evidently painful. The head sometimes becomes of enormous bulk, and below the belly a number of dropsical tumours may be seen.

The second day seldom passes over without a degree of weakness which does not accompany any affection of the chest. There may be disinclination to move in inflammation of the lungs; but this is downright incapacity for motion. We are then sufficiently aware this peculiar disease is present—epidemic catarrh, or distemper, or mucous fever, or influenza, for it is called by each and by all of these names. Epidemic it is: whether it be contagious is a question that has not been fairly settled; but when it once gets into a stable, no horse is secure from an attack—and it frequently runs from stable to stable throughout the neighbourhood.

When it is established, another train of symptoms succeeds, plainly characterizing the peculiar nature of the disease. There is sore throat to a far greater degree than in catarrh; while sometimes in inflammation of the lungs there is no sore throat at all. The horse gives up eating, and, day after day, he obstinately refuses to feed. The nose is first inflamed but dry. There is no discharge, but actually a want of moisture in the early stage. If the case, however

s to do well, the discharge will shortly appear, and in nuch greater quantity than in catarrh. The appearnce of the discharge is desired; for with it the everity of the symptoms generally abate. If by inudicious treatment the discharge should be checked, he weakness becomes excessive. The nasal membrane oses its red hue, which changes to a dull-purple colour. A thin, discoloured, and stinking fluid drains from the ostrils, and the thick full stream that announces reovery is not beheld. The breathing, which at first was ot violently affected, although the horse was tucked ip, becomes laborious, and the animal dies from inflamnation of the bowels or lungs, or from dropsy in the belly r chest, the last being the most frequent termination.

The measures adopted in the treatment of influenza nust be cautious. Blood, as a general rule, must not be aken.

Purgation is often present when influenza sets in, nd, even if the bowels are costive, physic is not safe. f the proprietor will give it, let him be cautious how ie administers more than a drachm and a half of loes in any form. Half a pint of linseed oil, in which drachm of camphor and the like amount of chloroform ave been dissolved, is better than aloes; but no laxative s demanded. If the fever be great, the following rink may, with advantage, be given night and norning, or even thrice a day:—

RECIPE (No. 28).

TAKE—Sulphuric ether, one ounce;
Tincture of opium, one ounce;
Nitre, two drachms;
Water, one pint.

Soft food, gruel, and a cool, loose box will be require
The legs should be well hand-rubbed to restore the ci
culation; and the swellings should be embrocated, i
the hope of promoting absorption. If there is sorene
of the throat, as there generally is, the part may l
stimulated with the embrocation. Nothing whatev
must be done to the eyes, however bad they ma
appear to be. There is one plan which will general
succeed, and which should be regarded as an indi
pensable portion of the treatment of distemper; an
that is, not to give one drop of water, but to hang u
in the box a pail containing very thin gruel, fro
which the horse may quench his thirst as often as h
pleases. Some degree of nutriment will be thus g
into him, which could have been effected by no oth
means.

When the inflammatory appearances are abated, an
much weakness remains, we may have recourse to mi
tonics, such as the following:—

RECIPE (No. 29).

Mild Tonic Ball for Influenza.

TAKE—Gentian, half an ounce;
Powdered ginger, two drachms;
Cascarilla bark, half an ounce:

To be made into a drink with a quart of ale or stout, and an ou
of sweet spirit of nitre.

This drink may be given morning and night. T
proper treatment in the after stages of this disea
when the bad symptoms are slowly abating, is to supp
the system; and to leave nature, as much as may be,
herself.

If, however, from the employment of too active easures the horse continues to lose flesh, and rength, and spirits, and the first tonic has produced febrile reaction, a stronger one may be tried, and ecipe, No. 22, p. 76, may be given.

Should the membrane of the nose become of a leaden lour; and during a later period of the treatment, the anks begin to heave; the extremities feel cold; the untenance appear haggard and the pulse be quickned—powerful stimulants will be required. These ght to be administered of a strength wholly disproortioned to that of the animal. No rule can here be id down, but the judgment must decide upon those easures which the case demands. Typhoid symptoms e best prevented by abstaining from the use of debilitating medicines in a disease which is so certainly ccompanied by weakness. To promote a copious ischarge from the nostrils should be the object of our eatment; and to forward this the employment of the se-bag, as before directed, will be found to be of imortance during the primary stages of influenza.

This disease has been very fatal to many horses; but is doubtful whether it was not made so by the means lopted for its cure. Now, fortunately, it is of a ilder character, and if the proprietor can have sense nough to aid nature in her efforts towards recovery, it es not generally terminate in death.

CHAPTER XVI.

PNEUMONIA, OR INFLAMMATION OF THE LUNGS—THICK WIND, BROKEN WIND, CHRONIC COUGH, AN ROARING.

PNEUMONIA, or pure inflammation of the lungs, is not malady so frequent as some have imagined; for it h been too much the fashion to consider eve disease of the chest as inflammation of the lung but it does occur too often for the interest of t proprietor.

I have hinted that it is an occasional consequence the other diseases of the chest which have be described. Common catarrh, and, much oftener, fluenza and bronchitis, may, if neglected, terminate inflammation of the lungs. The disease will proc along the air-passages, until the very substance of lungs becomes affected. It may also be caused by posure to cold; neglect after being heated by exerci change from a cold to a hot stable; over-exertion: short, anything that may lead to common cold capable of producing inflammation of the lungs.

It is of great importance to be able to distingu the symptoms of pure pneumonia, in order that proper treatment may be adopted: for, on accoun the faulty management of the stabled horse, and injury which the lungs receive from occasional e exactions, there is much predisposition to acute flammatory action. Many horses die of inflamma of the lungs within twenty-four hours from the c

encement of the attack. In extreme cases they have erished in twelve, and even in six hours; therefore ot a moment should be lost. When a fatal result kes place so rapidly as this, the lungs are found com- etely black, being engorged or suffocated, as it were, ith dark venous blood. This variety of disease has cently been termed pulmonary apoplexy; and is enerally brought on by over-exertion. It is charac- rised by a more rapid and distressed breathing than otherwise found; as well as by a more oppressed ulse.

The first symptom of pneumonia usually is a ivering fit. This is a circumstance which should ever be overlooked by the attendant. The moment a orse is seen to shiver, he should be most carefully ex- mined; and if there are other suspicious circumstances out him, and the pulse is strong, he should without lay have a drink composed of sulphuric ether and lau- anum, of each one ounce, cold water, one pint. Some ndeavour to cut the shivering fit short by brisk exercise. he horse is taken out, briskly trotted or galloped; en well groomed, and a hot mash put before him. This metimes succeeds, and inflammation is prevented by using the system to throw off the evil; but on the her hand, there are thousands of cases in which the sturbance of the system has been increased, and a fatal sult has been the consequence of ill-judged exercise.

The nature of the shivering fit should be carefully served. If, after a while, it passes over, and more an the natural warmth spreads over the frame, but e or more of the legs are icy cold, there is a decided tack of inflammation of the lungs. There are few

symptoms so invariable as this. In common catarrh, i
influenza, or in bronchitis, the legs may occasionally b
cool; yet often their temperature will be above th
natural standard, or it may be variable; but a fixe
icy coldness marks an attack of pneumonia.

The pulse should be anxiously examined. In in
flammation of the lungs the pulse will seldom be hard
it will occasionally be scarcely detectable, but it nearl
always has an obscure oppressed feeling; which wi
give the idea of fluid being forced onwards with diffi
culty: the careful observer in it will have a palpab
demonstration, the blood is congested within th
substance of the lungs; and the heart likewise lack
the power to urge it forward.

The flanks will heave quickly and laboriously: the
will evidently be much painful effort to force the blo
through the lungs; the idea of suffocation will be pr
sented to the attendant. Suffering is sometimes ind
cated by the anxious gaze at the side; a symptom whi
is not usually observable in the chest affections th
have subsequently been considered.

In addition to all this, there is a stiff manner
standing—an evident attempt to make the limbs t
fixed points; that the muscles which are common to t
thorax and the extremities may be employed in aidi
to expand the chest. For the same reason, a hor
affected with pneumonia can scarcely be induced to mov
and he will not lie down, but obstinately stand until
drops from fatigue, or falls to die. Other sympto
are the expanded nostril; the head drooping;
mouth hot; the membrane of the nose red;
appetite nearly, if not entirely, lost.

The treatment of inflammation of the lungs is simple ough. The first thing—first in order and in effect— o bleed. A broad-shouldered fleam, or lancet, should used, and the blood drawn in the fullest stream that n be got, until the pulse has risen, or the horse shows lecided change of symptoms. The broad-shouldered am or lancet is particularly recommended; because the icker the blood is abstracted, the more immediate and tent are the effects produced. When there is neces- y to open a vein, it should always be remembered at an evil is permitted to remove a greater evil. eeding is always an injury. The smaller the quantity en the better in every case; and the warmest advo- te of bleeding boasts only of its good effects in the rliest stage of pneumonia. At the commencement it often of marked service; therefore, if the farmer bleeds all let it be at the first start off of the disorder; and him only take sufficient blood to affect the pulse or uch the system.

Purging must not be attempted here, for there is too se a sympathy between the lungs and the intestines; d the affection of the one might very possibly be tended to the other: but if, as is usually the case, stiveness is present, a pound of Epsom salts may be solved in each pailful of water, and kept constantly fore the animal. The salts are a febrifuge in their· ion, and in the horse will rarely indeed effect more an relax the intestines. When this effect is pro- ced the salts should be withdrawn; for pushed ther than this, they are apt to gripe; and every ection of the bowels is of the utmost inportance ring pneumonia. Some fever medicine will also be

beneficial, and the following draught may be given twi
a day :—

RECIPE (No. 30).

Take Liquor ammonia acetatis, four ounces ;
Nitre, two drachms ;
Tartar-emetic, half a drachm ;
Extract of belladonna, half a drachm :
Digitalis, half a drachm :

Rub down the belladonna; dissolve the nitre and tartar-emet
in a sufficiency of water ; and mix the other ingredients.

This should be continued until the symptoms subsid
or until the pulse begins to intermit ; when it oug
either to be withheld, or administered in decreased qua
tities, according to the case.

When the active symptoms are reduced, counte
irritation should be adopted. Before this, the applic
tion of a blister would have added to the constitution
irritability ; probably it would have done little els
for, during the existence of violent internal inflamm
tion, it is seldom that the benefits of a counter-irrita
can be obtained. The liquid blister is to be preferre
and it should be well rubbed along the windpipe a
between the fore-legs, and even continued, in sev
cases, along the belly. Some persons apply the blis
to the sides ; but as the horse lies upon its side. this is
jectionable; because through the soreness which it indu
the horse may be prevented lying down ; also becaus
makes the motion of the ribs painful ; and in pneumc
the respiration, however laboured it may be, is alwa
to a considerable degree, suppressed. A seton in
chest is generally inserted ; but it does no good. and
annoying the horse must do some harm. It is of serv

ıly by informing the practitioner of the chance of re-
very; for if the seton produces no suppuration the
se looks badly; but if it causes a plentiful secretion
e discharge denotes that the body is recovering its
nctions, and a cure generally ensues.

When blistering the horse for pneumonia there are
vo ways of proceeding:—either with the blistering
ntment well rubbed in, or the simple liquid blister,
oroughly rubbed upon the parts; no previous pre-
ıration being necessary excepting the removal of the
ir. The ointment will require the less friction,
the small pieces of cantharides are retained within
e fat; and these particles can act upon the skin after
e lard has been dissolved. A liquid blister, however,
quires to be rubbed in for some time; the period
ffering with the state of the weather. Ten minutes
brisk friction will be sufficient in the summer; but in
e winter no certainty can be placed in its action,
ıless it be well rubbed into the part for at least a
ıarter of an hour.

Let the reader, however, not forget the hints which
ve been thrown out concerning the proper period for
sorting to counter-irritation. The inflammation should
ve diminished before the blister is applied. In the
ry intensity of the disease the blister will not rise at
l; or it may increase the general irritability and danger;
ıt when the primary inflammation has to a certain
gree abated, the blister is an excellent adjuvant. It
always an unfavourable symptom when the blister
es not rise. Either the original inflammation is too
tense, and absorbs too much of the vital power to
rmit any other part to be excited; or the favourable

moment has passed, and the system is utterly exhausted.

The horse should be turned into a cool, but not cold box. A cool and airy situation will be likely to lessen the inflammation and fever; but air too cold will drive the blood from the skin and the extremities, and determine it still more injuriously to the inflamed part. For this reason, while the air is cool, the clothing of the animal should be rather warm, and the perspiration, sensible and insensible, should be promoted; as causing a salutary determination of blood to the surface, and relieving the inflamed part.

The same consideration will show the propriety of hand-rubbing the extremities, and covering them well with flannel rollers. This may be greatly assisted by rubbing in a liniment composed of equal parts of the tincture of cantharides, of hartshorn, and of olive oil. The intense coldness of the legs shows that little of the vital current reaches them: but when a comfortable warmth has been restored, and the proper amount of blood has been solicited back to the feet, proportionally less will flow to the inflamed and overloaded parts.

As for food, the horse will rarely touch any; and if he were disposed so to do, he should not be allowed more than an exceedingly small portion of mash or green meat. To water he may have free access; a pailful should always be slung in his box.

No second drain upon the system, under pretence of another bloodletting, is in any case allowable. Weakness is sure to ensue, upon violent inflammation; while effusion into or dropsy of the chest is a termination to pneumonia much to be expected, and of course propor-

ionably to be guarded against. This can only be done
›y husbanding the strength to that degree which the
lisorder will permit. The old practice of draining the
ife out of a horse, under the notion of conquering some
emnant of inflammation, is now wisely discarded.

Supposing that the case has gone on well, and the
›atient is slowly returning to health, the care of the
›ractitioner should not even now be suspended; there
s still danger. The owner may be impatient, and the
›ractitioner may not be sorry to get the case off his
ands; but there is an old caution, seldom more appli-
able than here, "not to make more haste than good
peed." After pneumonia, as well as influenza, when
ealth is returning, nature will work more securely,
nd should be assisted with considerable hesitation.
Above all things, there must be no imprudent haste in
utting the horse that has recovered once more to work.
Rest for some time, with a daily run at grass, is impe-
ative. The food should not be too stimulating. A
›uple of feeds of oats is the most that can with safety
e allowed during idleness. No beans, no gruel, no
esses or cordials, are to be permitted after the medical
tendant has retired. Nature is then labouring to
pair the damage she has lately suffered; and good
holesome food, sweet water, and pure air, are the
ly materials she works with.

That which has been said about pneumonia supposes
e disease to be of an idiopathic kind. No remark
s been made upon that form of this disease which is
med congestion of the lungs, or pulmonary apo-
xy. This last form of disease is caused by over-
ertion; and is, therefore, most common in the hunting

field. The horse drops; he lies exhausted; the pulse is weak; the breathing to the highest degree laborious. If a vein were now opened, a quart or two of blood might be obtained; and this probably would prevent much of the evil which otherwise will ensue. Should a short time be allowed to pass over, and the attempt be then made to bleed the animal, the blood will not flow. It will trickle slowly down the neck, instead of jetting out into the vessel held to catch it. It will be black and thick, and look somewhat like treacle. When this is the case, it is of no use to persevere; but the orifice ought to be at once closed. A stimulant should be administered, in the hope of restoring the circulation. Three ounces of sulphuric ether, one ounce of laudanum, and four of liquor ammonia acetatis may be given every second hour, or even oftener. When the medicine begins to act, the pulse may become more distinct at the jaw, and then blood will be obtained. This is the proper time to bleed; and sufficient quantity should be taken to restore to the pulse its full tone, but not enough to make it falter. The stimulants may then be combined with gentle fever medicines, and the horse generally recovers quickly. If improper measures, however, are pursued, the case soon terminates. The breathing becomes more quick, a thin bloody discharge issues from the nostrils; the breath grows offensive; and the animal dies. After death, the lungs are found black, sometimes in place mortified, or going on towards putrefaction; they are, in fact, what the farrier calls rotten.

It is not invariably, however, that under the best treatment, even when the horse does not die, the

he is perfectly restored. The life may be saved; but the disease may have produced changes such as no human power could counteract. The horse may apparently be restored to health; but he will never be a sound horse. He may have

THICK WIND.

There is usually a great deal of congestion of the lungs in pneumonia. Many of the air-cells are filled with coagulated blood; and when they have long been distended by it, that blood becomes in a manner organized; the cells are quite obliterated. The function of respiration, however, must be carried on; and if one portion of the lungs is thus taken away, that which remains pervious and sound must work the quicker; the act of breathing will be more laboriously performed; it must be more rapidly repeated, and the horse will have THICK WIND.

Thick wind is sometimes the consequence of bronchitis, or influenza. Then it arises from the lining of the air-passages having been thickened by the inflammation, and the calibre of the air-tubes lessened; consequently, not only a smaller quantity of air is admitted into the lung, but of this smaller quantity the thickened membrane allows only a portion to come in contact with the blood. The breathing must, therefore, be more laborious; and this will sometimes exist to such a degree as, during excitement, to threaten suffocation.

Some degree of thick wind, however, may arise from other causes. Most round-chested and very fat horses are disposed to become thick-winded; because the cavity of the chest cannot sufficiently enlarge. This

fixed diameter of the chest will not permit the lungs to expand freely and fully during active and continued exertion. A horse may be kept too much in the stable, and generally becomes thick-winded; because the lungs cannot instantaneously accommodate themselves to the full and deep breathing which occasional exertion demands. A horse working on a full stomach may become thick-winded, because there is not room for the lungs perfectly to expand.

The frequent occurrence of thick wind after inflammation affords additional proof of the necessity of prompt treatment in pneumonia, that we may remove the congestion, and anticipate the effusion of febrine; this takes place towards the termination of inflammation, causing *hepatization* of the lung, or the converting it into a solid substance, like liver; and consequently rendering the portion thus changed unfit for the purposes of respiration.

Of the medical treatment of thick wind little can be said. The cells once obliterated can never be restored. All that can be done may be comprised under the following heads:—attention to diet; giving the food in as small a compass as possible; more corn and less hay; not working on a full stomach; regular exercise; exacting from the horse that degree of exertion of which he is capable without distress; which will gradually increase his wind, and his power of performing it. By these means, a thick-winded horse may often be made serviceable for all the common purposes of slow work.

BROKEN WIND.

This is sometimes the consequence of violent and protracted inflammation of the lungs; and it is also the

result of over-work; more frequently it is owing to sudden exertion with a loaded stomach; and not unseldom it is produced by coarse or watery food deranging the digestion. It is precisely what its name imports: it is a rupture of some of the cells of the lungs. The consequence of this is, that the integrity of the lung is destroyed; certain of the finer tubes leading to the ruptured cells are obliterated: the entire structure is as it were confused; the air is readily admitted into the lungs, but the elasticity being lost, cannot without great difficulty be forced out again. This satisfactorily accounts for the peculiar method of breathing which distinguishes the broken-winded horse. He inspires spasmodically; the expiration, or return of the air from the lungs, is, however, accomplished by a double effort; one succeeding to the other, and the last being the most evidently laborious.

Broken wind is accompanied by other symptoms. The horse has a ravenous appetite. The abdomen is enlarged; he is constantly breaking wind, or is habitually flatulent. A short hacking cough exists; and is easily recognized as characteristic of the disease. It is almost needless to state that such an animal is not in possession of its natural powers; it is decidedly unsound. The low horse-dealers know this, and employ many practices to conceal the disorder. They give the horse large quantities of fat or tar, or shot, or sedative medicine; and for a time these will render the symptoms less conspicuous; but the disease certainly returns, and often the horse perishes, in consequence of the treatment to which he has been subjected. A full draught of cold water will generally expose this trick; or by coughing

the animal, the sound emitted will declare the state of his wind.

Nothing can be done for a broken-winded horse in the way of medicine. The disease, however, may be palliated, and that to a considerable extent, by attention to diet and exercise in the manner just described when treating of "Thick Wind."

CHRONIC COUGH.

This is a frequent consequence of chest diseases; but still more so of laryngitis, or confirmed indigestion. Whenever the membrane of the windpipe is inflamed, great soreness and irritability of the larynx will long remain. When the membrane is irritable, a very trifling cause will produce cough. The very act of coughing is a proof of this irritability: the effect increases the cause; and the cough speedily becomes habitual: therefore it is that chronic cough is so difficult to remove; for we can neither get at the disease, nor stop the coughing attempt to relieve it, which is hourly increasing its intensity. Chronic cough, however, often exists to such a degree as to interfere with soundness; therefore there is every reason why we should be anxious for its removal. As it can be traced to inflammation or irritability of the larynx, a blister, reaching from ear to ear, and about eight inches down the windpipe, may be tried. It cannot do much harm; and the slight blemish which it occasions will soon disappear. However, it is rare for a blister to do any vast good.

Medicine will sometimes relieve the cough, and may be tried to a certain extent. If the cause is unknown,

a sedative medicine that will gradually allay the irritability, and yet not interfere with the appetite, may be daily given.

RECIPE (No. 31).

Ball for Chronic Cough.

TAKE—Belladonna, half a drachm;
Nitrate, two drachms;
Tar and linseed meal sufficient to make a ball:

Let this be given every night.

In a few instances chronic cough seems to be connected with worms; and the groom oftener attributes it to this cause than he is justified in doing. If, however, the coat is unthrifty; the flanks tucked up; if there be mucus around the anus; and particularly if worms are discharged in the fæces, it will be proper to put the connexion between the worms and the cough to the test.

RECIPE (No. 32).

Worm Ball.

TAKE—Emetic tartar, one drachm;
Sulphur, two drachms;
Linseed-meal, four drachms:

Make them into a ball with palm oil.

One of these balls should be administered every morning, a quarter of an hour before the horse is fed. A dozen may be thus given, and afterwards a physic-ball. If the cough is lessening but not gone, another dozen of the balls will probably remove it, but, if no benefit has been obtained; it will be scarcely worth while to incur the expense or trouble of the second course of the medicine.

Some benefit may be effected by attention to feed ing. The oats and the hay should be good; a fu allowance of the former, and a somewhat diminishe one of the latter, should be given; and especiall carrots should be allowed if at all practicable. Coug is occasionally produced by gastric derangement; and therefore, while the food is improved, the bowels shoul be regulated and the stomach strengthened. In colt however, while the teeth, and more especially th tushes, are being cut, cough is frequently present; an then the treatment will consist in abating any imme diate symptoms, without attending to the cough, whic will subside when dentition is perfected.

ROARING.

This consists in any unnatural sound emitted durin respiration. Some horses make a noise in breathin even when standing still; but in general the sound heard only during exertion. It is caused by a impediment to the passage of the air through t nostrils, fauces, larynx, or trachea.

Roaring is either acute or chronic. Acute ro ing is consequent upon some disease, and usua subsides as the disorder which occasioned it is m tered. Chronic roaring, which is decided unsou ness, is not so easily got rid of. Any tumour in nostrils, or thickening of the nasal membrane; a effusion into the fauces, or enlargement of the glan may produce it; and then it will occasionally yi to treatment, but it requires a Member of the Ro College of Veterinary Surgeons to point out the m sures which should be adopted. It is very frequen

induced by the colt being cruelly *lunged*, or by its head being unnecessarily reined up during the process of breaking. If the animal escape this danger, however, should he be destined for one of the carriages of the nobility, he will generally become a roarer. Fifteen out of every twenty roarers are carriage-horses. These animals are not more than others disposed to exhibit this affection; but it is the fashion to rein them tightly, in order to arch their necks. This silly and cruel practice causes either paralysis of the nerves of the larynx; which produces absorption of the muscles of the part and falling in of the cartilages; or occasions distortion of the larynx or the windpipe. Bands of lymph across the windpipe have also induced roaring; but they are by no means so common as is supposed.

To detect the roarer, the horse may be suddenly frightened, when a grunt will be emitted. The cough also is peculiar, and should be studied. It is not difficult to recognize it; but it is almost impossible to describe a sound. These proofs are, however, not conclusive; but the animal should be galloped up-hill, or over heavy land, and then the point will certainly be decided.

The cause must be discovered if possible. It will be readily suspected in a carriage-horse; and the anatomist will detect it by a careful examination of the part. If there is distortion, the case is hopeless; but when it can be connected with disease, and is only forming, but not thoroughly established, sedative medicine, blistering, and setoning may be tried. The tar-ball recommended for chronic cough (Recipe No. 31, p. 105) may be given. In the majority of cases, however, the labour

of the practitioner will be lost, and the roarer may be dismissed as incurably unsound.

CHAPTER VII.

PLEURISY.

This is inflammation of the membrane covering the lungs and lining the chest. Its causes are the same as those of inflammation of the air-passages or the substance of the lungs, viz., exposure to cold; sudden alternations of temperature; hard riding; to which may be added, as more likely to produce pleurisy than pneumonia, the absurd practice of leading horses, when hot, into cold water, in order to save a little trouble in washing them; the riding against a sharp wind in a cold winter's day has produced pleurisy; and wounds which have penetrated into the chest, and injured the pleura, without reaching the lungs, have given rise to it in intensity.

A careful observer will easily distinguish between inflammation of the investing membrane of the lungs and that of the lungs themselves. Many of the symptoms in both cases are alike. The preceding shivering fit; the loss of spirits and appetite; the hanging of the head; the disinclination to move—all are the same; the cough, also, is similar; excepting that it is shorter and more painful;—all these for the most part are characristic of both diseases; but there are other symptoms peculiar to this complaint.

The breathing is different. In pneumonia it is quick, but laborious, and the flanks heave. So, also, in

pleurisy the breathing is quickened; but its character is altered. It is sharp, spasmodic, and catching. The horse must inhale the air; but he evidently obeys the necessity with reluctance. The inspiration is timid and cautious; but it must be made. It is, however, never full; before it can be completed, the pain which it induces obliges the animal to desist, and with a jerk the breath is expelled.

The ear applied to the ribs of a horse suffering from pleurisy will detect a grating sound. When that is heard, the evidence as to the nature of the disease may be regarded as conclusive; but, if farther proof be wanted, it will generally be seen in the quivering of the muscles, or circumscribed shiverings upon the fore parts of the body.

This being inflammation of the lining membrane of the chest, the sides will also be more or less tender, and sometimes excessively so. This will be rendered evident by tapping, or even pressing on the side; for the horse will shrink under the hand. The inflammation of pneumonia is more deeply seated; and, although in both diseases the horse shows that he feels pain by looking anxiously at his sides, he does so more frequently, and the tenderness externally is most generally present in pleurisy.

In this disease, indeed, the pain is sometimes so severe as to induce the horse to lie down and roll.

One of the most characteristic circumstances, however, is the colour of the membrane of the nose. In pneumonia, this membrane, which is a continuation of that which is inflamed, is intensely red; but there is no connexion between the membrane of the nose

and the pleura; therefore it is never so highly red dened as in the forementioned disease: sometime during pleurisy it is scarcely changed until the lung begin to be affected.

In pneumonia one foot may be cold, and the rest the natural temperature; in pleurisy two or three ma be cold, and, where coldness is not felt, a more tha ordinary heat may be detected: and the pulse, whic in pneumonia was oppressed, and often scarcely quick ened, is here both hard and rapid. It is of importanc to attend to these distinctions; because the treatment the two diseases is somewhat different, and in thei terminations they are distinct.

In its main features, the treatment of pleurisy wi resemble that of pneumonia. Bleeding will be th first step, and more blood will have to be taken tha in the forementioned diseases, before the system r sponds in the manner pointed out when describin pneumonia.

Bleeding will be followed by the use of sedati medicines; which should be perseveringly administere White hellebore, in doses of half a drachm, twice a-da has been strongly recommended; but it requires ca fully watching, lest its action by accumulated doses ov power the system. Counter-irritation will be indicat but the reader must not forget the remarks which w made when treating of pneumonia. In pleurisy sides must not be blistered; for the disease being r to the surface, the irritation there excited would more likely to increase than to divert the inflamma which it is the object to remove. The surface of body is large enough. It presents plenty of choic

to the situation of a blister; for the part the most remote is still a portion of one general system.

The bowels, if costive, as they usually are in this complaint, should be relaxed by a mild dose of aloes; which in pleurisy are not attended with the same danger as in pneumonia; clysters should also be early and repeatedly employed.

The diet should be spare; and should consist chiefly of mashes, or green food. The box should be airy, yet comfortable; and the clothing, without being heavy, should be warm. If the inflamed membrane is so near to the surface, there is a better chance of diverting some of the blood from it to the skin when the animal is clothed comfortably; and the reader may be certain that he will send more blood from the skin to the inflamed part, if he suffers the animal to stand exposed to cold.

If the horse goes on well, the pulse will soon change its character: it will be both slower and softer; gentler, but at the same time more uniformly powerful. Next to this, the cough will be essentially changed: it will lose its short, stitchy sound, and its evident expression of intense pain; becoming more loud and full. The horse will not gaze so intently at his flanks; and he will move about more freely. There is, however, even more danger attending pleurisy than pneumonia; and the following are symptoms which denote that the case is going on badly. The horse is fidgety—uneasy—pawing: he will suddenly stop, to bend round his head; bringing his muzzle in contact with his side, and gazing mournfully on the seat of pain. All at once the pleuritic stitch will start up, and he will again begin

to paw his litter. He will prepare to lie down, in orde to try whether change of posture will give him a litt ease; he will put himself in the position for it agai and again: but he is afraid; he shifts, crouches, bend trembles, sweats, sometimes groans, and then all a once he drops as if he were shot.

It will only, however, be for a short time that h can lie down. The muscles of his shoulders and che are required in order to enable him to accomplish th now difficult act of breathing. His pulse gets quicke smaller, and yet more wiry; patches of sweat brea out all over him, and particularly about his side All at once, however, he appears to be getting wel the pulse drops perhaps twenty beats in a minute; th face becomes more composed; the horse looks bette he is quieter; the pain has evidently abated; but oth symptoms, and fearful ones, appear. The flanks, whi before were comparatively quiet, are now worked v lently. He obstinately stands fixed like the horse w pneumonia; he not only, like him, is unwilling move, but, at the slightest motion, his pulse beats pidly; he looks wildly around him; every limb tremb and he appears as if he would instantly fall; but recovers himself, and slowly moves on with a stagg ing gait. The short, stitchy inspiration is now go it is all labour; protracted suffocation; swellings apj under the chest; the pulse becomes faster, but wea than it was before; till at last the worn-out ani falls suddenly and dies.

The natural consequence of inflammation of a se membrane has for some time been going on. secretion from the membrane has been increased. a

uid of a various character has been rapidly accumulating the chest: it has been pressing upon the lungs; it has evented their expansion. As the cavity has filled, a eater portion of the lungs has been compressed, and ken from the office of breathing; and the animal has perienced the horrors of lingering suffocation.

The lungs of the horse that has died of pleurisy esent a very different appearance from that which s been described in a fatal case of pneumonia. The est, on one side, or perhaps upon both sides, is filled ith a serous fluid,—pale or yellow, or bloody: flakes coagulated lymph may be floating in it; or may have en only deposited over the pleura, thickening and scolouring the membrane; the pleura is, in general, sily peeled off; but at other times it is closely adher- g to the ribs; while bands of lymph are thrown ross; connecting the pleura of the lungs with that the chest. The lungs are not gorged and black ith congestion: but they are of a dingy leaden-purple lour; often so collapsed as to appear not more than e-fourth of their natural size.

In other fatal cases of pleurisy, no water will be dis- vered in the chest; but the membrane lining it will found thickened, opaque, red, and, in rare instances, most gangrenous in patches.

HYDROTHORAX.

It is of great consequence to be enabled to detect the mmencement of effusion, in order that measures may taken which will give a chance of arresting its ogress. The first symptom, and one that can scarcely overlooked, is the gradual diminution of pleuritic

pain. The next requires a little tact in the medica attendant, in order to be discovered. Horsemen begi now to be aware that, by applying the ear to the sid of the animal, the murmur of the air as it passes in an out of the lungs, can be distinctly heard. The effusio of hydrothorax, as it is secreted, falls to the bottom the thorax; it is there interposed between the lun and the wall of the chest; and being thus placed, pr vents the murmur of the breathing from being hear When, therefore, the ear being applied close to t chest, can readily detect the natural murmur, t examiner may be assured that there is no fluid y thrown out. But when all is silence at the bottom the chest, although the murmur continues to be hea above; it is quite certain that effusion has commenc and will probably proceed. A diarrhœa very diffic to check, and a rapid wasting, may accompany effus into the chest.

In the majority of cases it is only at the commen ment of the effusion that it can be attacked with well-grounded hope of success. It is the signal t inflammation has reached its termination; that debi has succeeded; and common sense will dictate that line of treatment must be essentially altered. measures must be immediately changed. Everytl must be done to counteract the exhaustion, which effusion would increase. No diuretics must, on account, be given, under the idea of exciting kidneys. Such medicines are weakening; the hope of saving the animal now lies in the chanc our being able to invigorate the system. Tonics therefore, indicated; but, at the same time, we d

promote absorption. Happily we possess a medicine which these valuable properties are combined. The iodide of iron is both powerful and safe; it will answer the intention admirably, and may be given in the following form:—

RECIPE (No. 33).

TAKE—Iodide of iron, a drachm;
Powdered nux vomica, a scruple;
Gentian, four drachms:

Make into a ball with honey, and give thrice a-day.

As, however, the iodide of iron is of a very perishable nature, and on that account may not be always obtained in country places; and as, moreover, when it can be procured, it is an expensive medicine; the following may, under circumstances, be substituted for it:—

Iodine, a drachm;
Sulphate of iron, a drachm.

The other ingredients are to be retained; and the ball to be administered at the periods before directed.

At the same time the food should be of the best kind. Ground beans and oats, with malt mashes, should be freely allowed; and whitened water must not be withheld under the idea of drying up the fluid by keeping the horse in an agony of thirst. Let him drink as much as he pleases—the draught will add to his strength, and check rather than increase the disease.

The effusion, however, being established, the practitioner should think seriously of getting rid of the fluid by an operation; thus relieving the lungs from oppression; encouraging the return of strength by

enabling the compressed lungs to expand and arterialize the blood. If, by the stillness at the bottom of the chest, and by that stillness advancing upwards, he is assured of the existence of effusion; the practitioner should have recourse to *tapping* the chest, and evacuating the fluid. If he does this early, he will secure the following very important advantage—the lungs will sooner return to the discharge of their proper function; for the portion which has long been compressed by the fluid, and rendered flaccid, very slowly or never, resumes its healthy action.

The operation is simple in the hands of a skilful surgeon, and to him it must be consigned: to him, however, it may be hinted, that the chest should afterwards be frequently examined, by applying his ear to the side; that if fluid continues to be effused, and to occupy the chest, it must be drawn off again. The most desperate cases will thus be, occasionally, at least successfully combated. A principal reason why the operation has been so seldom successful is—because the practitioner has contented himself with having once evacuated the chest; and has not considered the disposition to effusion may for a considerable time continue.

In man, however, when the effusion has once commenced, it will continue in spite of all that can be done: in the horse, should the animal appear to recover, there is no disease after which he is so liable to a relapse. The horse recovering from pneumony must never be securely reckoned upon: the horse saved after an attack of pleurisy will long be an object of suspicion. The pleura has to recover from maceration—the lung has to recover from its coll

e cough, the swelling of the legs, the disinclination
work, and the occasional stitchy pains, will often
mind the owner that the horse is not safe.

It must not be forgotten—indeed, cannot be too
en repeated—that the various diseases of the chest
en coexist, rendering the symptoms more obscure
d dangerous.

CHAPTER XVIII.

RDITIS AND PERICARDITIS; INFLAMMATION OF THE HEART AND ITS INVESTING MEMBRANE.

HE heart is the grand agent in circulation. It is the
ntral pump, by the power of which the vital fluid is
stributed to every part of the frame. It sympathizes
th every irregularity in the various structures which
mpose the body. If there is inflammation in any
rt, marked by the throbing and increased action of
e vessels of that part; it will not be long before the
art partakes of the irritation, and the pulse will be
idently affected. But the heart is subject to disease,
dependent of any sympathy with the different portions
the frame. It is itself the seat of inflammation. Car-
tis is a disease, not of frequent occurrence; but which
sometimes seen, and requires the most careful attention.
It is recognized by the quickness and strength of
e pulse; that is, referable not to any general affection,
t to the heart. Not only by applying the hand or
e ear to the side is its violent action ascertained;
t it is *seen* to beat. If the left side of the horse is
garded with attention, the chest evidently vibrates;

nay, the pulsations are *heard;* they are heard as soo as the practitioner, if he listens attentively, enters th stable; and sometimes they are so audible as to forc themselves on the observation of those who stand by. At the same time there is an unnatural fire in th expression of the countenance. The horse is all alive. So far from appearing to be sick, he seems to be woun up to the highest pitch of energy.

The real character of the disease being understood, there can be no doubt as to the treatment that shou be pursued. The horse must be bled. Such excessiv action must be lowered, by taking away some of th stimulus. There must be no delay about this; for, in an organ that is always at work is over-excited, an called upon to perform double labour, it will necessari be exhausted.

The bleeding should be closely followed up laxative medicine; linseed-oil being the safest, of whi two pints may be given. Sedatives should quick succeed, particularly digitalis; and in doses of t drachms each: while all food should be removed, at most, mashes only be allowed.

Although a violent disease, it usually yields ve readily to this prompt treatment.

Inflammation or over-action of the heart itself hitherto been spoken of; the covering of the hear also liable to inflammation equally dangerous; and disease is termed—

PERICARDITIS.

This disease, however, can seldom be recognized a living horse; or, at least, veterinary surgeons h

t yet sufficiently agreed on its distinguishing symp-
ns; nor has the cause of it been clearly ascertained,
cept as connected with carditis, or with pleurisy.
the first case, the symptoms of carditis continue for
hile; the throbbing of the heart is seen, producing
spasm of the whole frame; at length, when a fluid
gins to be effused within the bag, there is an irregular
ion of the heart, attended with laborious breathing,
l a feeling of suffocation. The horse is dull, weak,
l languid. He sighs frequently; but rarely turns
head to his chest. The pulse, at first regular but
anding, becomes irregular, weak, intermittent: it is
ised to a rapid, fluttering action by the least motion;
l it gradually sinks again to almost absolute cessation.
This, however, is so identified with the kind of
athing arising from the pressure of fluid on the
igs, that the one cannot always be distinguished
m the other; and, if it could, we should have less
ver over dropsy of the heart than over that of the
igs. In addition to which it may be stated that,
m the situation of the pericardiac bag, evacuation of
fluid would be far more difficult than in the case of
chest. The heart, however, has been tapped
ough the ensiform cartilage of the sternum; but the
eration is seldom successful, and can be performed
y by a veterinary surgeon who is well acquainted
h anatomy. The general treatment, in other
pects, would be the same as for hydrothorax,
refore, to that article the reader is referred; it being
tunate that two diseases, which, in their symptom
closely simulate one another, require similar mea-
es for their relief.

ENLARGEMENT OF THE HEART.

The heart is liable to several morbid changes; th most frequent of which is hypertrophy, or increase i its substance. This is sometimes so great as to doubl the natural size of the heart, and may be attended wit an increase of its cavities, or not.

Sometimes this morbid growth of the heart is of cancerous nature. We have known the heart double it natural weight, and altered in form, by fungoid growth The symptoms were principally an irregularity with strong bounding action of the heart, and at length th horse died suddenly.

These diseases are uniformly fatal sooner or later nor is there any treatment which can be absolutel recommended. The course of the disease, however will be checked in some degree by promptly meetin the symptoms from time to time as they appear.

CHAPTER XIX.

SPASM OF THE DIAPHRAGM.

This disease is introduced here because it may b confounded with carditis, and should be most careful distinguished from it.

Let it be supposed that a horse a little out of co dition, and perhaps with a full stomach, has bee ridden far and fast. He is pushed on after he h shown symptoms of distress; or his own courage carri him onward until he comes to a perfect standstil

nen, or soon afterwards, the following symptoms ppear; he stands with his legs fixed; his neck retched out; his nostrils expanded to the utmost; very limb trembling; the flanks heaving, and the ountenance exhibiting anguish; there is seen, at the me time, a convulsive jerking similar to that which as been described under the head carditis; the umping noise which accompanies disease of the heart heard and at the same distance.

An inexperienced person would confound this with rditis; and he would set to work to bleed the horse; nd as surely as he did so he would destroy the animal. lthough this sound is heard from the chest, the heart as little to do with it. *It is spasmodic action of the iaphragm.*

The diaphragm is the grand agent in respiration; it as comparatively everything to do when the breathing quiescent; and it has had more than its usual share of bour to perform; for the horse was out of condition, r there was much fat about the chest, or the stomach as full. The truth of the matter is, that the diahragm has been sadly overworked; it has assumed ne kind of action which every other muscle does hen completely exhausted, an involuntary spasmodic ne.

A little care will clearly ascertain this. The beating from the chest; but if the ear is applied to the chest ne chief sound is not from the heart; for the beating the heart can be heard distinct from the sound naracteristic of the disease. It can be most readily tected at the sternum, a little below and behind the art; from that point if a line proceeding obliquely

upwards and backwards be traced, the thumping w be heard all along the course marked out. The bea ings of the heart and this noise do not correspon The heart beats half as quickly again. The diaphrag beats violently; the heart feebly. There can no mistake about the matter. As convulsions us ally mark the last efforts of expiring nature—th spasmodic action generally shows exhaustion, and this spasm of the diaphragm is a proof of its danger.

No one would bleed an animal in a state of utt debility; the horse then wants a stimulant, and not sedative. Bleeding would be fatal, and often the hor is murdered in this way. The skilful observer wou first administer a cordial in a fluid form, as having th quickest and more powerful effect.

RECIPE (No. 34).

Cordial Drink.

TAKE—Powdered ginger, a drachm;
Powdered caraways, two drachms;
Tincture of opium, an ounce;
Sulphuric ether, two ounces;
Good ale, a pint.

If in the course of an hour no effect is produced, t drink may be repeated, or a cordial ball should be giv

RECIPE (No. 35).

Cordial Ball.

TAKE—Powdered capsicums, half a drachm;
Extract of gentian, two drachms;
Carbonate of ammonia, one drachm;
Camphor, a scruple;
Linseed meal, a sufficiency:
Mix with honey and give.

This will form the common cordial ball; but, in asm of the diaphragm, half a drachm of opium with o drachms of the subcarbonate of ammonia should be duced to fine powder, and beaten up with the other gredients; while thin gruel, or white water, warm, ould be put in the manger; and the horse should be ffered to drink as much as he pleases.

This will rarely fail of having its effect in rousing e general powers, although it may not immediately duce the violence of the spasm. But the energy of e system having been revived by a stimulus so ergetic, more reaction may be excited than is wished. may be even dangerous; it may possibly run on to flammation. This is to be guarded against; and now the time to bleed. Six pounds of blood should be ken away; plenty of gruel supplied; and the horse t for awhile to himself. In less than four-and-twenty urs all will generally be quiet; and a few tonic uretics will alone be required.

RECIPE (No. 36).

Tonic Diuretic Ball.

TAKE—Extract of gentian, two drachms;
Powdered ginger, half a drachm;
Sulphate of iron, two drachms;
Diuretic mass, half an ounce;
Oil of juniper, ten drops:
Beat them well together.

This may be given night and morning for a few days, l then changed for the tonic balls if the animal pears to require more medicine.

The *diaphragm* has sometimes been ruptured; which y be produced by too sudden and severe exertion.

The symptoms are often very obscure, but the mo
frequent are those of severe inflammation of the lun
combined with signs of aggravated colic.

CHAPTER XX.

TETANUS—LOCKED JAW—AND PALSY.

TETANUS is spasm of the muscles of voluntary motio
it is called LOCKED JAW, because the muscles of the ja
are generally among the earliest affected. It is rare
preceded by any serious illness; but usually appea
suddenly, the earliest symptoms being mostly discover
when the stable is first entered in the morning.

There are two kinds of tetanus. To distingui
them, they are called traumatic and idiopathic.

Traumatic tetanus is caused by wounds. Any inju
however slight or great, may produce it; but cuts o
the eye, punctures into the foot or tendons, have m
frequently been followed by it. When caused b
wound, tetanus is more rapid in its course, more viol
in its symptoms, and most difficult to cure. Trauma
tetanus is, in fact, rarely relieved. Idiopathic teta
can be traced to no known cause. It comes on with
our being able to account for its appearance. I
more mild, more slow, and more often conquered tha
that kind of tetanus springing from injuries. A
of the idiopathic kind, therefore, holds out some ho
of treatment being successful.

The symptoms which denote that the horse has b

tacked by tetanus should be known, as everything pends upon the disease being early recognised.

The horse is unable to turn his head easily round to s flank; the whole body must turn together, like a al board; the muscles of the neck are rigid and hard; e nostrils are dilated to the utmost; the ears are erect; e eyes retracted; the haw drawn over them; the counnance of the horse the very picture of despair. The uscles of the extremities, although less affected, are nsiderably involved; the poor animal is conscious of his ss of power over them, and fixes himself as securely as can; nothing but absolute force can induce him to ove. The fore-legs are wide apart, and inclined forards; the hind-legs are strangely straddling, and inined backwards; the tail is erect, and in a constant quiring motion. As the disease proceeds, the horse bemes more and more a fixture; and the jaws are, at length, firmly clenched, that nothing can be got into the mouth. This is a disease of extreme suffering to the poor imal. The human being tells us that his tortures are eat indeed; the pain which results from the cramp of e muscle will give some idea of the horrible torture at must attend universal spasm, continued, without termission, for many days. The cramp, however, ms but a portion of the agony which the horse under attack of tetanus must endure. The system is in a te of unnatural excitement; the entrance of any one o the stable—a hand laid upon the body—even the ise of an approaching foot—any sight, sound, or touch, y throw the animal into convulsions, or produce such gravation of the symptoms as shall convulse the entire me.

In every case of tetanus, we are, of course, mos anxious to learn the cause; and perhaps, upon pushing our inquiries, we gain some information on this head There has, perhaps, been some slight injury; a nail ha been driven too close; or a piece of glass has cut th foot; or a blow has been lodged just above the eye; o the knees have been recently broken; or the stable fork has been used to strike the horse about the legs, and th point of it has only gone a little way into the back sinews. Sometimes an operation has been recently per formed. Let not the proprietor blame the surgeon, i such should have been the case. Any puncture, howeve small, may produce tetanus; but it may not follow th most severe and the largest wounds. No means w know of can start it up, and no care or skill can prever its appearance. We may learn, however, that the ta has been docked or nicked; the wound has very nearl healed, and it may look as well as could be desired; o it may all at once have assumed an unhealthy appea ance; a thin ichorous fluid may be discharged from i and there may be a spongy appearance around i Most commonly the wound nearly heals; almost at th moment of closing, without any seeming unhealth change of appearance, this strange affection bursts fort

It is a nervous affection. The fibril of some ner has been injured,—irritation ensues,—it rapidly sprea along the various branches of that nerve, and, throug the spinal marrow, affects the whole body.

For the relief of tetanus there are some persons w adopt very decisive and severe measures. They ble largely in order that they may gain the full advanta of its sedative influence. When this plan is pursu

ıe blood should flow in a free full stream; it should ow on until the circulation is evidently affected. hat will not soon happen, for the irritation is too great, ıd too general, readily to yield to any sedative; and ore than ten or twelve quarts of blood will sometimes : lost before the pulse indicates that any effect has ;en produced on the circulation.

The consequence of this copious depletion will enerally be a temporary remission of the symptoms; ıd, advantage being taken of the relaxation of the uscles, a strong purgative ball or drink is given.

Having proceeded thus far; the next aim is to attack ıe disease as much as possible locally. It is evidently nervous affection. The practitioner, therefore, who lmires the severer plan of treatment, endeavours to ring the principle of counter-irritation to bear as far as ıay be practicable. A blister is applied from the poll) the rump. The common blister ointment (Recipe 21, . 73) will be as effectual as any. Some practitioners ave carried the principle of counter-irritation a great eal further—they have blistered almost the whole of ıe sides and the belly. They have by this means xcited such extensive inflammation of the skin, that ıe original affection of the spinal cord has occasionally isappeared. Setons also have been inserted along the ourse of the spine; but they have rarely been produc-ve of decided good effect. In order to produce more etermination of blood to the skin, and thus relieve the inal inflammation, sheep-skins, applied warm, should placed on the horse's back; reaching from the poll to e tail, and changed as often as they become offensive.

Another way of treating the disease locally is, to find

out the injured part from which the mischief has pro
ceeded. Some nervous fibril may be compressed there
—a few deep incisions across the wound may liberate it
Upon the chance of some morbid action within th
wound having produced this sad affection of the nerves
the cautery, or the caustic, has been applied; an
rarely, though occasionally, the irritation is said to hav
ceased. If the disease is from docking, another of th
caudal vertebræ has been removed; if from nicking, th
incision has been made deeper; or another wound clos
to the root of the tail has been incised.

In many cases, however, there may not appear t
have been any local injury; but exposure to cold; th
dripping of water on the back; indigestible food; c
various diseases, are imagined to have produced it; an
then general means alone can be adopted.

The physic having begun to work, or having bee
repeated until the effect is produced, the practitione
next looks around him for some sedative medicine, i
order to allay the dreadful excitation of the nervo
system. Opium is thought to be the sheet-anchor here
and, in conjunction with camphor, it is supposed to
almost uniformly beneficial. Two drachms of opium a
given as a first dose, with one drachm of camphor; a
a drachm of opium, with half the quantity of camph
is afterwards given four times in the day Such is t
plan perhaps most generally followed; but by no mea
attended with such results as establishes it, as the or
mode of treatment that ought to be pursued. In fa
the measures required to cure tetanus have yet to
discovered. The most opposite methods have fr
time to time succeeded, but all of them have more f

uently failed In the course described as generally ractised, depletion carried to the utmost point is epended upon; but stimulants also have been pushed the extreme, and these likewise have appeared to ubdue the disease. Sudden shocks; repeated drenchngs with cold water; or pails of water thrown upon the nimal; burying up to the neck in a dunghill; turning nto a river; and the injection of warm water into the eins, are each reported to have been successful; but one of these plans have, upon being tested, proved to ossess much influence over the disorder.

This being the fact; we inquire if the severe treatnent is absolutely necessary? In tetanus the pulse not always accelerated; and bleeding, therefore, is ot in every case indicated. The bowels are not in very case constipated; and purgatives are not always equired. The benefit of violent counter-irritation is ot demonstrated; and its employment, therefore, is ot justified. The best practitioners begin to doubt he efficacy of the active tortures of the old school; and o think that perfect quiet is of more use than violent nedicine. If the horse be costive, they administer a urgative, and a bold one; because an ordinary purge vill have no effect during the existence of tetanus. They then place the animal where it cannot be disurbed, and take care to visit it as seldom as possible. The door is locked and the horse is left alone; every recaution being taken to prevent the slightest noise. The absolute quietude thus obtained has been found to e of more service than anything else; and the horse hich has been thus shut up in silence has more freuently recovered than the one which has been con-

tinually annoyed under the pretence of effecting it restoration.

As for food—the horse is not able to take any soli nourishment; but he may have a mash more tha usually wet in his manger, and a bucket of gruel ma be slung in some part of the box; from either or bot of which he may, perhaps, contrive to extract a litt nourishment. The appetite of the tetanic horse rarel fails him; though he may be unable to eat, he wil under the influence of hunger, manage to imbib enough for his support. Even if he makes no attemp to touch that which is placed before him, he should b left some days before any effort is made to drench him and if he takes only a little nourishment, a furth period should elapse before he is annoyed by forcin food upon him. Should he, however, appear to losing strength and to be sinking, of course he mu then at every hazard be supported. Should it possible to insert a small horn or the neck of a sm bottle between his tushes and his grinders, almost a quantity of gruel may be given him; and when he is a manner starved, it is interesting to see how eage the poor fellow will take the nourishment which attempted to be given to him in this way. The dre ful cramp of the muscles of his neck should not, h ever, be forgotten; and the gruel should be given him as gently as possible, and without elevating head more than is absolutely necessary. Frequ injections of arrow-root or gruel may also be thr up. Where, however, the proprietor is possessed of instrument, the ordinary horse catheter, with Re pump attached to it, will enable any amount of g

be thrown into the stomach; not only quickly, but ithout the necessity of elevating the head. The atheter is simply passed up the nose, along the floor f the nasal chamber; and being pushed onward it will nter the gullet. When the tube is inserted its full ngth, the fluid may be injected. This stratagem nswers admirably; subjects the horse to little annoynce, and causes but small disturbance. Some animals; owever, are so irritable, that any interference throws iem into convulsion; and, in such cases, perhaps the njection of nutritive liquids into the rectum is all hich the symptoms will permit to be done.

In a disease of this nature the humanity and paience of the attendant must be exerted. These virues will aid him more in the end than all his science; owever learned he may be. The disease may terminate quickly. We have known a horse to die of it n less than thirty hours. So speedy a close, however, s rather unusual. The animal with idiopathic tetanus ften lingers. It occasionally happens that the horse loes not begin to amend until ten or twelve days have lapsed; and in one case that occurred in the practice of the editor of this work, a month passed without more than an occasional remission of the symptoms. The treatment was, nevertheless, persevered in, and the nimal perfectly recovered.

When the horse does begin to get better, not a particle of medicine should be administered. By giving onic medicines much dangerous excitation may be roduced. The best tonic is nourishing food, and even hat should be supplied with caution. Green meat vill in these cases be useful. If the weather, however,

will admit of it, a run for two or three hours every day will be of essential benefit.

PALSY.

The horse is seldom or never subjected to that kind of palsy which oftenest attacks the human being, palsy of one side; nor has he often general palsy. When it does occur it is usually of the hinder limbs, and then it is rarely complete; but the motion of the parts is rather deteriorated than lost. It may be the consequence of disease. Much stiffness of gait always accompanies inflammation of the kidneys, and sometimes it degenerates into palsy; which has also been the consequence of inflammation of the bowels--severe purging—exposure to cold--and poisons; but it is oftener the result of injuries of the spine, caused by accident or brutality. Falls in rapid action, and more particularly in leaping; awkward casting, or violent struggles after casting; blows on the back or loins; a heavy rider urging a small or weak horse too far or too fast;—all these may be causes of palsy: yet most frequently when the affection appears it can be traced to no source, but seems to gradually spring out of the constitution.

If palsy is the result of previous disease, it will sometimes disappear when its cause is removed. Should it not, warm clothing, and the application of stimulating liniments, as the mustard poultice, or the common liquid blister (Recipe No. 25, p. 78), must be resorted to.

RECIPE (No. 37).

The Mustard Poultice.

TAKE—Of mustard-flour and linseed-meal equal parts, and them together with a sufficient quantity of warm, not hot, vinegar

This is a powerfully-external stimulant, and perfectly
lfe.

When palsy is the result of accident, the horse
ıould be examined; and if there is occasion for it, the
ack or loins may be well fomented several times in
ıe day, for two or three days; at the end of which
eriod should the palsy be present the mustard poultice
r liquid blister should be applied. Slight contusions
: sprain of the spine may be thus relieved; and then
charge should be placed over the back and loins, and
ıe horse turned out to grass.

The action of medicine is uncertain in this disease;
ut the iodide of iron and the nux vomica in powder
ave appeared to do good. They may be used separately
: together; working the dose of each from half a
rachm to as much as the horse can bear. Then the
uantity of each must be lowered to half a drachm, and
)th be administered in combination. A ball is the
:st vehicle for these medicines; and the bulk required
ıay be created by linseed-meal and treacle, mixed
gether; or gentian and ginger occasionally may be
ıbstituted for the first ingredients. It is scarcely
:edible to what extent the spine will often appear to
ıve suffered upon examination after death. Anchy-
sis, or loss of motion in the joints, has, in aggravated
ıses, extended along almost the whole of the back. A
ery common and unsuspected cause of this is the
ırrow stalls of some crowded or ill-built stables. The
)rse is often compelled to bend himself into a half-
rcle in order to turn. The ligaments of some of the
ints of the spine must be stretched by this; and
pecially when the animal is too frequently forced to

bustle round as quickly as he can at the command of a brutal servant. Such injury may appear to be slight at first; but its frequent repetition causes inflammation, and converts the ligaments of the spine into bony matter.

CHAPTER XXI.

INFLAMMATION OF THE STOMACH—POISONS—RUPTURE OF THE STOMACH—BOTS—WORMS.

The stomach of the horse is very small compared with the bulk of the animal. Nature designed this, in order that its weight might not rest too oppressively on the diaphragm, interfering with the action of that important respiratory muscle.

The stomach is not only small, but it is singularly constructed. More than one-half is covered with insensible cuticular membrane; and the remainder is enveloped in villous membrane, similar to that which lines the intestines. The food is first macerated within the cuticular portion of the stomach; and then by the muscular portion of the part forward to the villous coat, where it undergoes digestion. Inflammation of the stomach, unless caused by eating too large a quantity of food, is not characterized by any symptoms which can readily be interpreted; signs of acute colic attended with violent thirst would be exhibited.

The stomach, however, occasionally becomes inflamed through the administration of poison. The most common vegetable poison is the yew. The horse will rarely eat it when green; but the half-dried clippings

f the yew-tree are now and then picked up. It will e well to remember this distinction when any case of upposed poisoning by yew occurs. The horse may ften graze without danger, although there are yew-rees about; or although the field may he surrounded y a yew-hedge. Natural instinct will teach him to void that which would be hurtful; but when the lippings are dried, and the smell of the yew is con-derably changed, danger results.

The principal symptom of this kind of poisoning is a range sort of drowsiness. The horse stands, propped p by a gate or wall, with his head hanging down lmost to the ground; and he is regardless or unconscious f everything around him. At other times he lies own, breathing loudly and hardly; and is with difficulty oused to momentary attention, while it is almost im-ossible to make him rise. In this way he sleeps or ozes on, until slight convulsions occur, and he pre-ntly dies; or else he may fall and die suddenly.

The nature of the poison having been ascertained, ith this knowledge, likewise, comes the fact, that no nown antidote has yet been discovered for this vege-ble poison. It is, however, powerfully narcotic in its tion; and consequently the following measures are dicated. To keep the animal constantly upon the ove; never to allow him to rest till the potency of e poison has been overcome; to administer stimu-nts of the most active kind; such as ammonia in solu-on; ether likewise dissolved; spirits; strong ale, and en pepper.

The Mayweed (a species of wild camomile, *Anthe-is cotula*) has sometimes, like the yew, caused violent

illness and death. This is seldom eaten when found green in the field; but when mingling in its dried state with the hay, it has done mischief. The animal in this case should be drenched with the gruel and vinegar; and if costiveness follows, twelve ounces of linseed-oil, guarded by half a drachm of chloriform, should be given every six hours, until the symptoms improve. The oil may be also mixed with the yolk of an egg, and a few drops of oil of aniseed added.

The Water Parsley has sometimes produced palsy; and the Water Dropwort has poisoned the horses that have eaten it. When this occurs the animal should be treated as in the previous case.

If horses are destroyed by the mineral poisons, it is generally to be attributed either to design or unskilfu treatment. All of the mineral poisons, in certain doses, are useful in many diseases; in fact, they some times constitute almost the only means of cure: bu the dose being too large, or the use of the drug to long persisted in, the animal may be destroyed instea of the disease.

It is fortunate for the horse that ARSENIC is n frequently resorted to, as an internal medicine. was always a dangerous tonic, and especially after acu disease. Many a horse that would have gradual mastered strangles, influenza, or inflammation of t lungs, has been lost by the practitioner administeri arsenic in order to hasten the animal's recovery. cases of worms it has been given with fatal effect. may be used with less danger as an external applicatio but it has occasionally done mischief even here, a there are many safer and better caustics.

The symptoms of poisoning by arsenic are—the ident expressions of intense pain; the presence of cessive thirst; the eager gaze at the flanks; the wing and rolling; the membrane of the eye is of a ep scarlet; the saliva runs from the mouth; while the rging is profuse, fetid, and sometimes passed with ood.

The case may not always be quite so plain; but the vner may wish to ascertain the truth or falsehood of me horrible suspicion. The presence of arsenic is ry easily detected by chemical analysis properly conucted. The process, however, is too complex to be re detailed; and the reader is therefore referred to y of the many excellent works which dwell upon this bject.

The treatment will rarely be successful. The poison ill too frequently have done its work when the mptoms become sufficiently urgent to be recognized. lenty of thin gruel or whitened water, which the rse will drink with avidity, and two drachm doses of ium repeated every hour, afford the best chance of ving the animal.

Poisoning from CORROSIVE SUBLIMATE is usually the sult of unskilful treatment. Lotions of it are emoyed for the cure of mange; or the destruction of rmin; although, unfortunately, it is much more easily sorbed than the arsenic. Sometimes, also, the imal may lick off a fatal portion of the drug.

The symptoms are nearly the same as those from isoning by arsenic. The remedy will consist of the hites of eggs mixed with starch or gruel, and the equent administration of opium.

RUPTURE OF THE STOMACH.

The horse not being able to vomit if the stomach be distended, and by the distention not paralyzed, it will contract upon its contents; but, unable to urge them forward or to cast them upward, the viscus is often torn asunder by the efforts which it makes for its relief. This is always fatal; and yearly destroys many animals. Old horses, those which are kept out long; then brought home to have a loaded manger placed before a ravenous appetite; are the animals which most frequently die from this cause. The work and long fast deaden the sensibility. Hungry and weak, they feed and feed without nature warning them that the stomach is full. At length a drowsiness ensues: symptoms of colic may follow; but more often they do not appear. The animal then suddenly seems better; but the lesion has taken place; and the horse experiences only a temporary relief. The signs which are generally regarded as indicative of violent colic now commence in earnest. The pulse is quick but sharp, although, at the same time, small. There are efforts to vomit; and the horse not only rolls but he sits upon his haunches. The head is turned to the side, and with the foot the belly is struck. The pulse becomes more hurried. The breathing grows quicker; the brain at length sympathizes; the horse wanders about for a time, and then expires.

In these cases nothing can be done; and, in fact, could their existence be correctly ascertained; the knacker should be employed instead of the veterinary surgeon. As, however, the symptoms are very close

.o those of general abdominal disease, it would be wrong to abandon every animal in which the possibility of ruptured stomach was suspected. The proper course, therefore, will be to treat the horse in such a manner, as, in the opinion of the practitioner, the symptoms require; and on this subject direction may be gathered from those found under the heads of colic, nflammation of the bowels, and of the peritoneum.

WORMS.

Bots are the larvæ or maggots of a species of gadfly the *Œstrus equi*), that deposits its eggs on those parts of the horse which the animal is most apt to lick. The egg is hatched by the warmth and moisture of the tongue; the little worm is conveyed into the mouth; hence carried down the œsophagus into the stomach. It adheres most frequently to the cuticular coat of the stomach, by means of little hooks, with which its mouth is furnished; and there it remains from the summer of one year to the spring of the next; nourished by the mucus of the stomach, or by the food which it contains. Then, having attained its full size as a maggot, it loosens its hold; it is carried along the intestines, and evacuated with the fæces. Before it drops, it generally clings for a while to the verge of the anus; while doing this it tickles and teases the horse. When the groom sees the bot under the tail, he is alarmed; and administers injurious purgatives, to get rid of the evil.

Bots, except they exist in considerable numbers, may do no great harm during their residence in the stomach of the horse. The advice, therefore, to the owner

would be—let them alone; or, at most, be content with having them picked off when they appear beneath the tail. There are two good reasons for this;—the first is; that there is not any medicine that will expel them: the strongest and even the most dangerous purgative is for this purpose insufficient. The horse may be injured or destroyed by the violent measures adopted; but the bot sets all physic at defiance. The second reason is; that, if the bots are let alone, they will, in due time, come all away without our meddling. At the latter end of the spring, the larva, detaches itself from the stomach; is carried along the intestines; drops on the ground; burrows into it; and becomes a chrysalis or grub. In a few weeks it undergoes another and more wonderful transformation;—it awakens from a state of sleep; bursts through its horny shell; and assumes the form of a fly.

There are, however, WORMS in the intestines which are more often injurious to the horse; yet seldom to the extent which is often feared. The small intestines contain a round white worm, from six to fourteen inches in length. This worm (the *Lumbricus teres*) in its general figure very much resembles the common earth-worm; and it lives either upon the mucus of the bowels, or the nutritive part of the food. A strong dose of physic will often expel an almost incredible number. The appearance of one or two will at once suggest the propriety of adopting measures for the removal of that which is then known to exist.

When the bowels are in a manner full of them, they take too much nourishment from the animal; and irritate the coats of the intestines. The proof of the existence

of worms will be the unthrifty appearance of the horse; the enlarged but tucked-up belly; the staring coat; the ravenous appetite; or a harsh hollow cough.

Even now it will not be necessary to have recourse to any violent measures. No strong mercurial physic, which endangers or half kills the horse, is needed. The following ball will usually be effectual in the expulsion of the parasites.

RECIPE (No. 39).

Worm Ball, for Long, Round Worm.

TAKE—Emetic tartar, one drachm;
Calomel, half a drachm;
Powdered ginger, half a drachm;
Iron filings, six drachms;
Linseed-meal, one drachm:
Make into a ball with palm-oil.

One of these balls should be given every morning, half an hour before the first feed; and, after six or eight of them have been taken, the horse should have a dose of common physic.

The owner should not be dissatisfied if only a few worms are voided. They are usually destroyed within the intestines; and, the preservative power of life being lost, are digested. The best proof of the medicine having been effectual will be that the worms cease to appear; and the horse improves in condition.

Another kind of worm (the ASCARIDES) inhabits the larger intestines; and particularly the last of them—the rectum. It is a little worm, two or three inches in length, and not much thicker than small twine; but these annoyances often exist in very large quantities. They are rarely dangerous; but they occasion distress,

causing great irritation and itching about the anus; and provoking the horse to rub the hair off his tail against the wall of the stable: sometimes, though seldom, they have produced extensive inflammation.

The strongest physic, as it is usually administered, will seldom expel the ascarides. They must be attacked in their stronghold.

RECIPE (No 40).

Injection for Ascarides.

TAKE—Powdered aloes, half an ounce;
Powdered gum-arabic, half an ounce;

Pour on them half a pint of boiling water; shake the mixture well until the aloes are dissolved or suspended; then take

Train oil, one quart; and
The yolk of an egg:

Rub them well together until they are thoroughly incorporated; and gradually add the solution of aloes, stirring the oil as the aloes are added.

Let this be injected into the rectum every morning, as long as any ascarides are voided.

There is another slender worm which somewhat resembles the ascarides, though rather longer and larger: it is called the STRONGYLUS, and, when voided, its body is dark.

In the treatment of them, as well as other kinds, due regard should be paid to the general health. Powerful medicines should not be given when there is great debility; but vegetable tonics should be first employed to amend the condition of the animal.

CHAPTER XXII.

INFLAMMATION OF THE INTESTINES — PERITONITIS — ENTERITIS—DYSENTERY—SPASMODIC COLIC—FLATULENT COLIC — IMPACTMENT — STRANGULATION — CALCULI IN THE INTESTINES.

UNDER the general name of inflammation of the bowels here are included two diseases which are properly distinguished by different names.

PERITONITIS; INFLAMMATION OF THE EXTERNAL OR SEROUS COAT OF THE INTESTINES.

This is a very frequent disease. It is caused by the application of cold water to the belly of the horse; either by taking him into the pond, or washing him with cold water; and sometimes by suffering him to drink plentifully when he is heated. Exposure to rain; overexertion on a full stomach; and injuries, have produced it; also it not unfrequently occurs during the later stage of inflammation of the lungs; but the disease will likewise sometimes occur without any assignable cause. From whatever cause it arises, it runs its course with fearful rapidity. Like pneumonia, it sometimes destroys the horse in less than twenty-four hours; and occasionally in less than twelve.

The symptoms of peritonitis should be carefully studied; for many a horse will be lost if they are not early recognized. One of the earliest symptoms is the expression of very acute pain. The animal paws; strikes at,

although he does not touch, his belly; looks at hi flanks with a more sudden turn, and a wilder gaze than inflammation of the lungs; rolls, struggles violently lies upon his back, groans; the legs are cold; the mouth not hot, and sometimes cold; the membrane of the nose very little reddened, sometimes paler than the natural hue; the flanks heave violently; the horse shivers and sweats; the pulse is quick and hard; while the belly is hot and exceedingly tender. The violence of the symptoms however, soon abates; and the horse rapidly becomes scarcely able to stand.

This disease may be distinguished from colic by the pain, which, though less violent, is without remission; also by the character of the pulse; by the tenderness of the abdomen; and by the fæces being covered with mucus.

The treatment is plain. The patient must be bled; the stream must flow until the character of the pulse has changed. In the early stage the horse will lose a certain quantity of blood with advantage: but, twelve hours having passed, the strength of the animal will be exhausted; and copious bleeding will not be practicable, or, if it were, it would not be safe.

The next thought should be about some agent to relieve the bowels of their contents; which, if retained, would probably increase the disorder. Strong physic is out of the question; the bowels are already too irritable; it would be adding fuel to fire: but mild aperients may be administered. Linseed-oil, however, is the only aperient that can be ventured on. A pint may be given, guarded by a drachm of chloriform, and the following should shortly afterwards be administered:—

RECIPE (No. 41).

TAKE—Tincture of opium, two ounces;
Sulphuric ether, two ounces;
Cold water, one pint.

This medicine may be repeated every six hours after ıalf a pint of the oil has been exhibited; which last, ıowever, should *generally* be discontinued when a quart ıas been administered; whilst the laudanum, &c., may ›e continued longer. Frequent injections of warm ›ap and water should likewise be thrown up.

Next comes the important principle of counter-irrita-ion. The whole of the belly should be stimulated. Iot fomentations to the abdomen should be employed; nd, in desperate cases, the belly has even been fired by assing a red-hot shovel under it. There is, however, o occasion to resort to so severe a measure; but where speedy and powerful vesicant is required, the strong quor ammonia will be found to answer every purpose. A thin cloth, once or twice doubled, should be made et with the liquid; and placed next to the skin, while ver the cloth another, thicker and larger, several times lded, should be held to prevent evaporation—thus bjecting the body to the action of ammoniacal fumes, ıich would otherwise escape. In this way all the ects of the most powerful blister may be obtained a quarter of an hour or twenty minutes. The rse, at the same time, should be warmly clothed, l his legs bandaged; for these may cause some ermination of blood to the skin, and relieve the amed part.

Of course the horse should, as quickly as possible, be

got into a loose box, which ought to be well littered down. Clysters and back-raking are suggested by the very nature of the disorder; and, beside all this, a drachm of calomel and two drachms of opium, in powder, ought to be shaken upon the tongue every hour. Peritonitis is so rapid in its course that there need be no caution about the mercury producing salivation; and the opium is imperatively required to deaden pain; for unless the suffering can be softened, the system will soon be exhausted.

The food, supposing the horse to survive, should consist of mashes and thin gruel; except green meat can be procured, which may be given in moderate quantities. It should be perfectly evident that the disease has entirely subsided before any hay or corn is allowed, and, even then, the horse should very slowly return to the use of hard meat.

A quantity of red and often thickish water will be found inside the abdomen of the horse which has perished of peritonitis; and the external membrane of the intestines or peritoneum will be seen inflamed. Such appearances are conclusive as to what was the character of the disease; and it is by no means rare to discover them in the colt which has died soon after castration. Peritonitis, indeed, too frequently follows that operation; but the proprietor must not, therefore, conclude it has originated from any want of skill on the part of the practitioner. It will best be prevented by observing the condition of the colt before the operation is performed; as to precautions at that period the farmer is too often neglectful.

ENTERITIS—INFLAMMATION OF THE MUSCULAR COAT OF THE BOWELS.

This disease, if not in the first instance energetically ombated, may, in eight hours, reach a fatal termination. It rarely lasts in its intensity more than twenty-our hours; but it is often the consequence of gripes r colic; and thus appears to be longer that it really is. 'he wiry pulse, with tenderness of the abdomen, and ontinuous pain, distinguish the attack from gripes; but :om peritonitis it is only to be separated by the fæces eing in small black lumps and not coated with slime; ıd perhaps by the belly being not quite so painful pon pressure.

The causes are nearly the same as induce peri-nitis; but to these acrid or unwholesome food may added; and enteritis may not be, like the former sorder, so frequently connected with injuries and ith inflammation of the lungs.

In every case of enteritis, spasm is present; and, this is associated with inflammation, bleeding is manded. The horse should be bled. A purgative mbined with an antispasmodic should then be administered, and the following will answer the purpose:—

RECIPE (No. 42).

Drink for Enteritis.

TAKE—Solution of aloes, eight ounces;
Laudanum, two ounces;
Sulphuric ether, two ounces:
Add a pint of cold water and give.

A drachm of opium, combined with half a drachm

of calomel, may afterwards be administered every hour; and, if the pain has not abated, the sulphuric ether may be repeated. The other measures are the same as recommended in peritonitis; namely, back-raking, clysters, counter-irritants to the belly, &c.; but, after enteritis, the food should be given sparingly; and nothing which is of a hard or dry nature placed before the horse for some time.

DYSENTERY—ACUTE DIARRHŒA, OR VIOLENT INFLAMMATION OF THE MUCOUS MEMBRANE OF THE BOWELS.

This is too frequently the consequence of physic either of bad quality, or given in an over-dose; or under circumstances which should have warned the practitioner of the consequent danger of purgation. If physic has not been given, yet the horse may have been ridden or driven far and fast, with nothing but green meat in his belly; or, inflammation of the lungs may have quitted its primary situation, and have attacked the mucous membrane of the intestines. Being inflammation of the internal coat, the numerous vessels which secrete the mucus of the intestinal canal share the irritation; they pour out an increased quantity of fluid, and purging ensues. This disease can hardly be confounded with the foregoing. The pulse, although hard, is not so much so as in enteritis, not is it so wiry. The muzzle and extremities are not so cold; sometimes they are warm. The horse shows that he suffers intense pain; he looks anxiously round at his flanks; he is continually shifting his position; he lies down and immediately rises again; but he does not roll

violently; nor does he kick so desperately; nor is there much tenderness of the belly. At the same time he is purging instead of exhibiting the obstinate costiveness which generally accompanies enteritis.

Thousands of horses are destroyed every year by over-physicking; for the purging, once running on to the production of any considerable degree of inflammation of the mucous membrane, can seldom be effectually stopped. The first inquiry should be as to the length of time that the purging has existed; the degree of pain that the animal has evinced; and the nature and quantity of the discharge. If not more than twenty-four or thirty-six hours have elapsed since the physic began to work; if the dejections are not very fœtid, even although the discharge should be frequent, we may not despair; but we must not be too sanguine in our expectations. There may as yet be more irritation than positive inflammation of the parts; and, while we wish to stop the excessive discharge, we also desire to support the strength; to sheathe the bowels, and calm the excitement. Opium will answer one of these intentions. Plenty of tolerably thick gruel or starch should be horned down; as well as thrown up in the form of injections; and with it, every hour, a drachm of opium should be given. The starch will possibly sheathe the coats of the bowels, which, by the purgation, have been deprived of their protecting mucus; and, the opium allaying the irritation, perhaps the purging may gradually stop. If, however, eight-and-forty hours have passed, and the discharge continues as abundant as ever; or, although it may have decreased, it is voided with pain, and mingled with much slime; while the

mouth is hot; the countenance anxious; the flanks heave; the pulse is much accelerated, and at the same time small, the case is almost hopeless. Bleeding is never safe where mucous membranes are affected; and here, after purgation, it would be absolute murder. A blister may be applied to the whole extent of the abdomen; and a sheepskin to the loins will do no harm. The chief dependence, however, will be placed in sulphuric ether and laudanum; two ounces of the latter with three of the former being given every hour in a pint and a half of cold water. If no marked effects follow upon three or four doses, the like quantities should also be exhibited in the form of injection. When any fœtor is detected, the chloride of zinc, in scruple doses, dissolved in a pint of water, should be given both by the mouth and rectum.

If the purging should abate, the medicine should be discontinued; or, if the horse appears to be narcotized, no more should be given than is necessary to keep up this effect. It will be a good symptom if the injections are retained; and, that they may be retained, they ought never to exceed in quantity a quart at a time.

After the purgation ceases constipation generally follows. This will sometimes continue for a week. Let not the proprietor be alarmed or seek to remove it. In time nature will resume her functions; and gruel or green meat should constitute the food; but no mashes of bran ought on any account to be given.

This is the disease which the groom designates "*molten grease.*" It must not be confounded with a little spontaneous purging or simple diarrhœa: which

is often an effort of nature to cast off something that is injurious to the system; and therefore is best relieved by an oily laxative, which in dysentery would aggravate the disease.

SPASMODIC COLIC.

This is a very frequent disease. If it is timely attended to, little danger appears to accompany it; almost every groom has a supposed specific for it, and one that is often successful. The chief object is to know the disease when it occurs; not to confound it with inflammation of the bowels, which requires very different treatment. The symptoms by which the one may be distinguished from the other can be readily recognized after one or two cases have been carefully observed. In both there is pain; stamping; looking at the flanks; and rolling: but in inflammation of the bowels the pain is constant; in colic there are periods when the horse enjoys a total relief from pain, and turns to the manger to feed. In the first, although the horse stamps violently, he takes great care to touch his belly tenderly; in the second disease he often strikes his belly desperately with his hind feet. In the one, the belly is hot, and pressure on it gives much pain; in the other, there is no heat, and moderate friction evidently affords relief. In inflammation of the bowels, the pulse is, from the beginning, wiry and quick; the mouth is first hot, and then clammy, or deathy-cold; in colic the pulse is not always affected at first, although, after a while, it quickens; and the mouth is of its natural temperature. Throughout there are usually some premonitory symptoms—as dulness,

loss of appetite, and constipation—belonging to an attack of inflammation; colic comes on suddenly, without any warning. Motion sadly aggravates the pain of inflammation; a horse with colic may become a little easier if he is walked about; though it is always safest to let him have a loose box, and take what exercise he pleases.

The history of the case should also be inquired into. If the horse, previously in perfect health, has, when heated, had access to cold water; or been exposed to a cold wind; or, if he has been exercised violently on green meat; either colic or inflammation may be the result; but if the symptoms follow a little sluggishness at work, and want of appetite with constipation for a few previous days, it is most probable that inflammation exists.

Having, therefore, considered the history; and observed the symptoms; and decided that the horse is labouring under an attack of spasmodic colic, the following drink should be given in a pint of ale or cold water:—

RECIPE (No. 43).

Colic Drink.

TAKE—Solution of aloes, six ounces;
Sulphuric ether, one ounce;
Laudanum, two ounces.—Mix.

If in half an hour or an hour relief is not obtained the draught should be repeated; only the aloes must not be again administered; but their place should be supplied by one drachm of tincture of capsicums, and one drachm of camphor, ground to a fine powder, with

a few drops of spirits of wine. The abdomen should by this time be well rubbed or fomented.

After the second drink has been given without relief, it is often necessary to moderately bleed the horse; not only to reduce the spasm, but to anticipate the inflammation which will probably ensue upon a prolonged attack. After this the drink should be repeated; two drachms of powdered opium may be given in an injection, and a stimulating embrocation may be rubbed over the belly. It is very rare for an attack of colic to continue longer; but if it should the rubbing and the drink should be persevered in; or even the ammoniacal blister previously described may be applied to the abdomen.

A horse recovering from a fit of spasmodic colic should have his water a little warmed for several successive days.

IMPACTMENT.

This is generally found only in old horses which have immoderate appetites and weak digestions. It is produced by masses of dung accumulating in the bowels and stopping up the passage. It is distinguished from colic by there being no periods of perfect ease; and from inflammation by the absence of pain on pressure; and by the character of pulse, which may not be much affected. The disease, however, generally continues for a longer time than does simple colic, and more frequently terminates in inflammation. The object is to relieve the bowels; and large quantities of oil with half a drachm of chloroform to each pint, back-raking; and frequent injections, are employed for

this purpose. Bloodletting is also proper; and often immediately will be followed with a free discharge of fæces. A drink composed of sulphuric ether and laudanum, of each two ounces, may be administered thrice a-day; or even oftener if the symptoms are severe; and the abdomen may likewise be fomented or stimulated.

FLATULENT COLIC.

This species of colic, although essentially different from the spasmodic, both in its nature and treatment, is scarcely recognisable from it in the early stage of the disease; excepting by its being more continuous and less violent in its symptoms. The one is a spasmodic constriction of the bowels; the other is distension of the bowels from the extrication of gas. There is the same uneasiness, pawing; rolling; with little change in the pulse or the temperature of the extremities; but in flatulent colic the animal is rather uneasy than furious; the distension of the stomach or bowels, or both, soon causes an evident enlargement of the abdomen; while, at the same time, there may be greater discharge of flatus per anum.

The drink for colic (Recipe No. 43, p. 152) should be first administered; but, if this does not give relief in the course of an hour or two, the drink as amended by the addition of capsicums and camphor should be given; while frictions to the belly and frequent purgative enemas are at the same time exhibited. The horse, however, should be left quiet; and not be trotted or galloped under the idea of thereby getting rid of the wind.

Sometimes the disease is very obstinate, and requires repeated changes to be made in the medicine before it will yield. If such prove to be the case, a drachm of carbonate of ammonia may be used instead of the camphor. If no good is done, the ammonia may be exchanged for half the quantity of chloride of zinc; or linseed oil and chloroform may also be administered: always, however, continuing the laudanum and sulphuric ether, which will in the end generally be successful.

In some cases, however, all our labour is to no purpose. The horse continues to swell; he is blown up as tight as a drum, and his breathing becomes laborious. It will now be imperative to relieve him, or the animal will die; and a mode of treatment has been suggested, founded upon the means used to remove the hoove in cattle, namely, to puncture the cæcum, as the rumen of the cow is sometimes punctured. This might answer in the hands of a skilful veterinary surgeon; but no other person should attempt the operation. It is often performed by the French veterinarians; and has been lately introduced by some Scottish practitioners. This dangerous operation, however, should only be employed as a last resource.

STRANGULATION AND INTROSUSCEPTION OF THE INTESTINES.

When the symptoms of severe spasmodic colic do not readily yield; either inflammation of the bowels is at hand, or strangulation—twisting of the intestines may have taken place—so as to cause an insuperable obstruction to the passage of the fæces. Occasionally, however, the spasmodic action being long continued,

one portion of the gut will enter and be confined within a neighbouring portion; thus also an insuperable obstruction is formed. No good can be done in either case; and we can only guess at what has taken place by the obstinate costiveness of the horse; by the animal exhibiting some symptoms which are not natural to inflammation of the bowels; or by its not exhibiting some symptoms which are characteristic of that disease; to which both strangulation and introsusception, in their general features, bear so marked a likeness, that without close observation they cannot be distinguished.

CALCULI IN THE BOWELS.

In some horses, and particularly in those that work in dusty mills, these are not unfrequent. A small portion of stone, or of iron is swallowed, and becomes lodged in some part of the intestinal canal; particles of earthy matter gradually surround it; until the stone sometimes attains an almost incredible size, having, in extraordinary instances, weighed so much as twenty-five pounds. In some instances these have been found after death, when the horse had seemed to enjoy perfect health; at other times he has been occasionally off his feed, or appeared to have had colicky pains; or he has been unwilling to attempt, and indeed has been almost incapable, of rapid action.

The last attack, however, is almost invariably protracted; and the symptoms are more violent than is usual in other abdominal diseases. The duration of the disease and the acuteness of the suffering—especially the agony exhibited in the early stage; when the horse dashes about so as to injure himself—together with the

fact of its having been previously, from time to time, affected with colic; alone enables us to guess that a calculus is present. The strongest purgatives administered in the largest doses have for a season afforded relief; but the attack, before many weeks expire, returns, and ultimately destroys the horse.

These calculi are generally found in the colon; but others consisting of hardened fæces termed dung-balls; or composed of the matted hairs of the oat, and called oat-hair balls, are met with in the rectum. Back-raking should, therefore, always be practised in every case of abdominal disease, more especially if the symptoms are at all dubious. Measures calculated to allay the pain are likewise called for, but we know of no means by which these deposits can be removed or dissolved.

CHAPTER XXIII.

INFLAMMATION AND OTHER DISEASES OF THE KIDNEYS AND BLADDER.

THE kidneys are actively employed in separating the watery parts of the blood, as well as a peculiar principle, the *urea*; which, if it were suffered to accumulate in the circulation, would prove poisonous. The practitioner is sometimes anxious to remove much of the serum from the vital current; because, by diminishing the natural quantity of blood, he rouses the absorbents to take up certain dropsical effusions in different parts of the frame. Therefore it is that he sometimes gives

diuretics; and places his principal reliance upon them in all cases of anasarca, or swelled legs.

Experience, however, proves that every organ overworked is subject to disease; and few organs are more overworked and abused in common stable management than the kidneys. If the gland is too much irritated by the improper use of diuretics; or if any kind of food that stimulates the urinary organs be given, one frequent consequence is

PROFUSE STALING.

This is an annoying and a very weakening complaint; and the horse affected with it cannot endure much hard work: it indicates weakness of the part, and leads to weakness of the frame generally. Diabetes is caused by the debility of the kidneys; which is naturally accompanied with irritation of those organs, and hence their excessive secretion. Some persons bleed and physic in this affection; but those measures generally aggravate the symptoms. Others give astringents; and, if this line of treatment is adopted, the following may be administered:—

RECIPE (No. 44).

Catechu, two drachms;
Opium, a drachm;
Oak bark, in powder, two drachms;
Make into a ball with treacle.

A more generally successful method is, in every case of profuse staling, to change the food, no matter how good it may appear to be. This is always safe, and frequently it is of every importance. Let hay and oats

be obtained from a new quarter; and then let the horse constantly have before him a pail of thin linseed gruel, from which he may drink as much as he pleases; which will usually be a considerable quantity. This does him no harm; but, on the contrary, soothes the irritability. As for medicine; iodine is here the best that we are acquainted with, and it may be given in the form recommended under the head of hydrothorax (page 115).

After the discharge has abated, a few tonics; very gentle work; and some slight nursing, will usually restore the horse to its former health.

DIFFICULTY OF STALING.

This is sometimes another and an opposite consequence of bad food, or the tampering with diuretic medicines; it is far more dangerous than profuse staling. The horse strains very much in attempting to void his urine; the effort is evidently attended with a great deal of pain; and, after all, he is able to evacuate only a small quantity at a time. The groom, little thinking that this is owing to the neck or mouth of the bladder being constringed; either from spasm or swelling of the surrounding substance; gives a diuretic ball to overcome the stoppage. He often does overcome it: for he determines a quantity of fluid to the part, which no obstacle can resist; but he does this at the hazard of producing inflammation, or of causing rupture of the bladder.

In mild cases, gentle measures, such as a laxative dose of aloes; green meat; and linseed gruel, will often be all that is required. In other instances, however,

the symptoms will be violent and alarming; the paroxysms being most severe, and the brain even becoming affected. The horse should at once have the catheter passed; but no violence should be used if the spasm resist its entrance into the bladder. The hand should be introduced into the rectum, and pressure made upon the distended bladder, which will be readily felt. If this is of no avail, blood should be taken from the jugular, and a dose of physic administered, and followed up with sedatives; while copious enemas of warm water are employed; and hot fomentations to the loins and abdomen. Should the agony be great, injections of not more in quantity than a quart each; containing three ounces of sulphuric ether, and two ounces of laudanum, may be employed every hour until ease is procured; but, during the time when all this is being done, gentle attempts should be made at intervals to pass the catheter; and to press out the urine by means of the hand within the rectum.

If the treatment recommended be pursued and persevered in; this disease, in nearly every instance, is ultimately conquered. It bears some resemblance to gripes; but is distinguished from that disorder by the straddling of the hind legs, roached back, and constant ineffectual efforts to urinate.

INFLAMMATION OF THE KIDNEYS.

This is a very serious disorder; and not unfrequently a fatal one. Inflammation of the kidneys can scarcely be mistaken by an observant practitioner. There is considerable fever; even more than when other organs of greater bulk are affected. This is clearly indicated

by the heat of the mouth; the heaving of the flanks; and the acceleration of the pulse. The feeling of very acute pain is plainly shown by the frequent stedfast gaze at the affected part; and that part is marked out by the direction of the muzzle to the loins more than to the belly. There is disinclination to move; because the kidneys being closely related to some of the muscles of the loins, the least motion will give intense pain. In order that there shall be as little stress as possible upon these muscles, the back is arched or roached; and the hind legs are straddled very curiously and widely apart. The disinclination to move, or rather the inability to move without acute pain, assumes, in bad cases, the appearance of palsy of the hinder extremities. It seems to shift from side to side; and from leg to leg; in proportion as the inflammation shifts from one kidney to the other. If the hand is now placed on the loins, an unnatural warmth is felt; and the horse shrinks and crouches under the slightest pressure.

The urine, which at the very beginning was voided more frequently; and with perhaps greater difficulty than usual as the disease proceeds, escapes in smaller and smaller quantities. It becomes high-coloured, perhaps bloody. It diminishes by degrees; until only a few drops are voided at a time; and at length it ceases altogether to appear; yet still the horse may strain; because the bladder is sympathetically affected, and the straining is accompanied by increasing agony.

The mere difficulty of staling, however, and its gradual ceasing, may be referable to another cause, namely, spasm of the neck of the bladder. It then becomes necessary to settle this point. The hand well

oiled should be introduced into the rectum. If there is inflammation of the kidney, the bladder will be felt as a hardened ball under the gut; but, if it is inflammation of the neck of the bladder, the protrusion of the distended vessel cannot possibly be mistaken.

Inflammation of the kidneys, however, is the subject now under consideration. The case must not be played with. The secretion of the urine is one that can be suspended but a very little while without manifest danger or certain death. The patient must be bled; blood must be abstracted until the horse threatens to fall.

To this must succeed physic; but it must be physic that is not likely to have a diuretic effect; and which, while it will be effectual, will not irritate the neighbouring parts. Aloes, because this drug contains resin, ought not to be given, and even the solution is not quite safe. A pint of linseed oil, in which is mixed ten drops of croton oil, guarded with half a drachm of chloroform, may be administered; and half the dose repeated every eight hours until purging is produced. Plentiful injections of warm soap and water should be thrown up; for they will answer a double purpose;—they will assist the physic, and act as useful fomentations in the immediate neighbourhood of the inflamed part.

To these, as in other cases, will succeed counter-irritation. The loins should be frequently fomented with hot water, or, what is far better, a blister should be applied over them. The majority of the blisters, however, in common use, have a diuretic as well as a vesicatory effect; and therefore must not be resorted to. Turpentine and cantharides must be avoided as pregnant with mischief. The mustard-poultice, when

properly made, will be very effectual; and it has no stimulating effect on the urinary organs. It will be assisted if a sheepskin is also placed upon the loins.

While the inflammation is high, little food, and that of the mildest nature, should be given. The patient may have a bran mash before him, and a bucket of linseed tea within his reach. All medicine should likewise be avoided until the physic has ceased to operate; and then almost the only drug that can be given with safety is the white hellebore.

RECIPE (No. 45).

Hellebore Ball in inflammation of the Kidneys, or as a Sedative generally.

TAKE—Fresh white hellebore-root, powdered, half a drachm;
Linseed-meal, four drachms:
Make into a ball with treacle.

One of these may be given morning and night while the inflammation is acute; but they must be suspended when the disease begins to subside; or if saliva should flow from the mouth; or the horse should hang his head with any appearance of stupidity or unconsciousness. The bowels, should, at the same time, be kept in a rather softened state by means of small doses of linseed-oil.

This is a disease which often leaves mischief behind it. There will long be a tendency to a return, and, perhaps, an incapacity for very hard work. The strictest attention should be paid to the food. Green meat will be useful. A ramble in the paddock during the day, when the weather is fine, is always desirable.

The hay and corn should be carefully examined; and no diuretic medicine should be suffered to be brought into the stable. If the horse is worked at all hours, and in all weathers, he should have his loins protected by a leathern flap; if he is a saddle-horse, the rain should not be suffered to drip on his loins as he stands waiting for his rider. After a very severe attack of this disease, should the horse not gain the full and free use of his hind limbs, *a charge* over his loins will be of very great service.

RECIPE (No. 46).

A Charge for the Loins or Legs.

TAKE—Pitch, three pounds;
Tar, one pound;
Bees'-wax, half a pound:

Mix them together, and, when they are cool enough to be conveniently applied, spread the charge thickly over the loins, and scatter some flocks of short tow over it before it gets quite cold and firm.

INFLAMMATION OF THE BLADDER.

Inflammation of the mucous lining of the bladder is sometimes coexistent with inflammation of the kidneys. The nature of the urine is changed by the diseased state of the sac that contains it. It becomes acrid, and irritates the coat of the bladder. Stimulating food; some poisonous herbage; and certainly the presence of any strange body, such as a stone in the bladder, are occasional causes of the disease. It is recognisable by the frequency of the staling; by the mingling of mucus, or pus, or blood with the urine; by the slight additional heat which is felt when the hand, introduced into the rectum, rests upon the bladder, which will be small

and empty; and also by the acute pain which pressure occasions, as evinced by the shrinking of the animal.

Little can be done in such a case. Bleeding and mild physicking would perhaps be indicated, with plenty of linseed-tea: and some relief might be obtained by the injection of linseed-tea, in which sedatives, as opium or belladona, are dissolved, into the bladder; which may be effected by means of a catheter invented by the late Mr. Read. The aloes, if any be given, must be good, and not in too great quantity; for the lower intestines generally sympathise considerably with the irritable state of the bladder; and if there is not much purging there will be tenesmus—perhaps, dangerous inflammation of the bowels.

A slighter degree of inflammation of this viscus, and properly described by the term "irritability of the bladder," is frequently observed. The urine dribbles away in small quantities, and is occasionally mingled with blood; the consequence of some previous disease of the bladder, or, perhaps, of some derangement of the digestive organs. This is suffered to continue and increase until the horse loses condition; the appetite is impaired, and the animal becomes unfit for work.

Small quantities of aperient medicine, with vegetable tonics, will be serviceable in this case.

RECIPE (No. 47).

Drink for Irritable Bladder.

TAKE—Linseed oil, six ounces, and beat it up with the yolk of an egg; then add chloroform, one drachm;

Extract of gentian, two drachms; with

Opium and uva ursi, of each one drachm.

Give this every third morning.

GRAVEL AND STONE IN THE BLADDER.

These are far from being unusual complaints. It is very common to see a horse discharge a great deal of gravel with his urine. Several pounds have been evacuated in the course of a few months.

The symptoms of stone in the bladder are well marked. In the first place the urine is thick; loaded with mucus or pus; or it may contain blood. This would lead attention to the urinary organs; but, in addition, is the manner of staling. The horse discharges the fluid freely; but, after he has done so, he continues straining violently, though nothing passes from him.

The nature of the complaint being suspected, it is very easily put to the test; for, as was observed when the diseases of the bladder were described, that viscus is readily felt from the rectum; the presence and size of the stone may be thus ascertained.

Nothing but the removal of the stone can give relief. To accomplish this there are two methods, either of which the proprietor may adopt. The urinary calculi in the horse are composed mostly of the carbonate of lime or chalk. This substance is readily dissolved by muriatic acid; and as the mineral acids in their passage through the body undergo little or no change, if this agent be given by the mouth, it will reach the bladder in a state fit to act upon the calculus we wish to remove. It will dissolve the calculus, which will then be conveyed away with the urine. A drachm of the acid may be mixed with every gallon of water which the horse drinks. The process, however, is slow; but it may be quickened by daily injecting some of the

acidified water into the bladder by means of Read's catheter and pump. Yet even then it will not be speedily accomplished; in certain cases, the owner may, rather than submit to the delay, prefer hazarding an operation; which will settle the business more quickly, and, to the horse, is not so dangerous as to the human being. Nevertheless, before an operation is resorted to, it is only prudent to regard it in conjunction with the animal upon which it is to be performed; and the circumstances to be taken into consideration, with regard to the performance of that operation, are the age, and health; the value of the horse, and the size of the stone.

The operation being resolved on; the horse should be thrown, and a whalebone staff, with a groove at the end of it, passed up the penis; until its point can be felt about an inch and a half below the anus. The staff being held firm by an assistant, the operator makes an incision directly upon the groove, and into the urethra, where it winds round the arch of the ischium: into this he introduces a dilator (which is an instrument that can be made to expand), and passing it into the bladder, he causes its enlargement; and thus widens the mouth or neck of that organ, until it will admit of the passage of the stone, the size of which has already been ascertained through the rectum. The forceps are then introduced into the bladder, and the stone is seized; the right hand being in the rectum will materially assist in accomplishing this. The stone having been firmly grasped, is attempted to be withdrawn with a gentle movement of the forceps, from side to side; in order to surmount any difficulty in the passage, and to prevent contusion or laceration. After the stone is once grasped,

the operator must be careful not to lose hold of it until it is extracted.

In a great many cases, perhaps in the majority of them, the forceps will be unnecessary; as, the fingers of the left hand being carried through the external wound into the bladder, the right hand introduced within the rectum will not only direct the stone to them, but assist in forcing it through the orifice. No stitches are passed through the edges of the wound. The urine will at first flow almost wholly through the wound; but the opening which should be bathed thrice daily with the weaker solution of the chloride of zinc, will gradually close; for, at the expiration of about a month, it will usually be healed, and the whole of the urine be discharged through the urethra.

In the foregoing description the operation has been considered as it would be practised upon the horse; but in the mare it would be much more simple. No staff would in the female be required, and no cutting need be resorted to. The dilator can be at once introduced; and, after it has sufficiently expanded the short urethra of the mare, the rest of the operation is proceeded with in the same way as has been pointed out.

CHAPTER XXIV.

CASTRATION, AND THE DISEASES OF THE GENERATIVE ORGANS.

Custom, and indeed the pleasant and safe use of the horse, require that the colt should usually be gelded. The operation of

CASTRATION

is performed with greatest safety before the foal is weaned; but, as the glands have not commonly descended at this age, it can rarely be performed so early. The form of the neck and shoulders is materially affected by the length of time the colt remains perfect; wherefore the carriage-horse, and the horse of heavy draught, should never be castrated before he is a twelve-month old. If his fore quarters are then large and muscular, the sooner he undergoes the operation the better; if they are weak and thin, he should be allowed some further time; many dealers do not castrate until the colt is two years old; and, in particular cases, the operation is even delayed till the animal has attained his fourth year.

A great many new methods of castration have been lately promulgated; and each has had its defenders. As a general rule none of these are very dangerous; and it is difficult to decide which is, in every respect, the best. Place and season seem to influence the result. For a long period one plan may be practised with success; but all at once, without any reason being obvious, the deaths may be frequent; and, perhaps, the method which previously was found to be injurious will then answer best. Before a colt is cast for castration, it should be carefully inspected. Any symptom of disease; or any appearance even of dulness, should be removed before the operation is undertaken. Upon no account ought the colt labouring under, or breeding strangles, to be touched. If the animal be in perfect health, and the weather be also favourable; a few bran mashes and a

dose of physic will make the operation more safe; bu in very many instances it is performed without an preparation, and the colt steadily progresses: it is wel also to know that, though precautionary measures lesse the dangers, nevertheless nothing that man can do wil possibly render the operation entirely free from danger

Wooden clams, with and without caustic, with th testicle covered and uncovered, are by some practitioner strongly recommended; but the old method with th knife and iron is, perhaps, most generally practised and, with common care, there is comparative littl danger about the operation.

A collar of the common girthing web is to be placed not too tightly, about the neck of the colt; and he i then to be thrown on the left side. The croup is to b raised a little; and the right leg drawn up as far as can be towards the collar. Some persons, however prefer to draw up both legs, and turn the colt on h back.

The operator should then place himself behind, somewhat to the left of the patient, according to th manner in which he has been thrown; and begin examine the scrotum, more accurately than he w before enabled to do. This is necessary in order ascertain the situation of the testicles; and whether the have so thoroughly come down as to enable him grasp them firmly. It is not always that he can do s If the operator, however, anticipates difficulty in r taining them in his grasp, let him pull them down low as he can, by steadily and gradually applying forc without violence.

It will be, on the whole, more convenient for th

operator to begin with the left testicle first; the man at the head being on the alert, and the twitch having been put on, the operator grasps the gland; pushing it down to the bottom of the bag; thus making the scrotum tight and smooth over it. Then he, with one incision from before, backwards, and along the whole extent of the scrotum, cuts through the integument; the dartos muscle; the tunica vaginalis; and the testicle slips out.

The operator must now shift his hand downwards, and seize the testicle, holding it steadily; not drawing it out, but humouring the struggles of the animal; while the man at the head is steady, and the twitch is tightened.

The struggles of the animal, which will probably be great at this time, having somewhat ceased; the operator draws the testicle down a little farther, and places the clams upon the cord; having wound a little tow about them, in order to cause them to press more equally and securely upon the cord, and perhaps deaden the pain, as well as prevent the bleeding. The vas deferens should be divided with the knife; as so doing will also save the colt much unnecessary pain. The point at which the cord should be divided having been settled; leaving it neither so long as to protrude from the scrotum, nor so short as to be laid hold of with considerable difficulty: let all be steady. Should, however, hæmorrhage ensue, the clams are closed and fastened; and that sufficiently tight to stop the circulation of the blood, but not unnecessarily to bruise the cord.

The cord is now to be divided. It would appear to be the most surgical way to do this with the knife; and afterwards to sear the end of the cord, in order to pre-

vent subsequent hæmorrhage; but hæmorrhage will sometimes occur afterwards, to the great trouble and mortification of the operator. A better way is, to draw a blunt firing-iron, which must not be too hot, repeatedly across the cord, until it is divided; the vessels will thus be in some measure torn asunder, and quite as much stimulated by the heat as burned by the fire; and much bleeding will rarely ensue. The clams should therefore be a little loosened; that the operator may see whether the bleeding is effectually stopped. If there is oozing of blood from the end of the cord, it is much more prudent to apply the firing-iron, which should be only at a dull black heat, again; than to run the risk of the vessels being gradually forced open by the pressure of the blood. There is no point, however, about which the surgeon should be more anxious, than to apply the iron with just sufficient severity to accomplish the intended purpose, and no more; for many of the colts that are lost in castration die from inflammation produced by the needlessly severe application of the cautery.

The same mode of proceeding being adopted with regard to the other testicle, the operation is at an end, except the mere cleansing of the part with cold water. The colt should be turned into a paddock; for the little exercise which he will then take will assist the escape of any pus, or other fluid, from the bag; and will prevent both swelling and inflammation. He should even be made to walk about three or four times daily; some digestive ointment having been smeared over the wound to keep off the flies; if the period of the year should chance to be summer.

Little attention is afterwards necessary. There will sometimes be a considerable degree of swelling; and perhaps extending beyond the scrotum, and along the belly; but if, on the third day, there is a discharge of healthy pus, there will be no cause for fear; as the swelling will gradually subside; if, however, there is no discharge of pus; whether there be or be not any swelling, it will be prudent to open the wounds a little with the fingers, in order that the pus which is pent up in the scrotum may escape. Should much fever ensue after castration, and the colt begin to be evidently ill, the peritoneum is probably inflamed; for that membrane in the horse is continuous with the internal covering of the scrotum. Warm fomentations to the parts, with such measures as have been advised under the head of peritonitis, should be resorted to. Very great swelling of the scrotum, evidently containing fluid, are best treated with slight scarifications and fomentations.

A mode of castration by means of *the clams* has been lately introduced; and somewhat extensively practised. A dry branch of elder, or of some other wood, is selected; about an inch in diameter, and five or six inches long. This is sawn or otherwise cut lengthwise through the middle; and the internal surface of each thus exposed is smoothed; and, by removing the pith (or, otherwise, if a simple piece of wood be used), a groove along the entire length is made. About half an inch from the ends of each, a niche is cut sufficiently deep to hold a strong waxed string; by means of which they are tied together at one end, their flat surfaces being opposed to each other.

Into the groove is put a paste of a caustic nature; like to one part of sulphate of copper with two parts of wheaten flour; or one part of nitrate of silver, or of the bichlorite of mercury, with four of flour, moistened with a little water. There are, however, many forms for making these pastes; each practitioner generally having one to which he attaches much importance; but, so it be of a caustic character, it does not signify of what it may be composed. After all, it is doubtful whether the caustic is of any material service; for the clams applied without it have been found to answer; though, perhaps, the after-consequences have, in a greater number of cases, been evil. There is, however, no proof of that fact; but it is the general belief; and certainly the caustic has never been thought to do harm. It should, therefore, be used; but at the same time it is well to know it is not absolutely necessary. The clams act by pressing upon or strangulating the cord; which is placed between them, and the free ends are then tied as firmly and closely together as possible. The current of blood is thus cut off from the part below; which consequently dies, and sloughs away. The full action of the clams is obtained in twenty-four hours; but sometimes they are left on two or three days. But the shorter period is sufficient. At the end of the time the practitioner with a knife divides the strings at one end; and either the clams instantly fall off, or they are allowed to remain till they do so.

There are two ways of applying these clams; the operation, according as they are used, being called the covered and the uncovered. For the covered, which, in certain cases, as when scrotal hernia exists, is the

preferable way; the bag is grasped by the hand; an incision is made through the skin; and the dartos muscle; taking care not to divide the tunica vaginalis, which is the lining membrane of the scrotum. The outer coverings, the skin and dartos, are then carefully dissected from the inner membrane; the sac of which is preserved entire. Then, care being taken that the tunica vaginalis contains nothing but the cord and testicle, the clam is placed over it; and so closely and firmly tied as completely to stop the circulation of the blood. In the other, or uncovered operation; before the application of the clams, the tunica vaginalis, as well as the skin and the dartos, is cut through, and the cord pulled gently down. The clams being sufficiently pressed together and secured; the testicle is usually cut off, in order that the weight of the gland may be removed. The principal art in the performance of this operation is to make the clams press equally and sufficiently firm.

This mode of castration is almost uniformly adopted in France; but many English practitioners adhere to the old practice of the knife and iron. Another mode of castration has been attempted with occasional success; which, from the comparative little pain which it inflicts on the animal, is well worthy of some further trial. The horse is secured, and an incision made through the scrotum. The vas deferens and the cellular membrane above the epididymis are then detached; and the testicle is left attached by the spermatic artery and vein alone. A pair of forceps constructed for the purpose, and called the "torsion forceps," are then applied to the spermatic artery,

three inches from the epididymis; and the testicle is cut off. The forceps being then turned about ten or even twenty times, the cord is suffered to retract as far as it will; the forceps being still held that a clot of blood may be formed, are then opened; and the operation is at an end. This mode of proceeding, however, experience has shown to be not so safe as it appears to be humane. The twisted artery has given way; and hæmorrhage has ensued.

SWELLING OF THE SHEATH OF THE PENIS, AND AMPUTATION OF THE PENIS.

Sometimes at the close of severe illness the sheath of the penis will suddenly become enlarged, and œdematous. The treatment will depend on the circumstances of the case; but, generally speaking, a few cordial balls, with gentle exercise, will effect the cure. At other times, a swelling, not so large, but hard and painful, will proceed from the accumulation of oily dirty matter within the sheath. The sheath of every horse should be occasionally examined, and cleaned out with soap and water. The filth being long suffered to remain unnoticed will sometimes cause excoriations and ulcers; producing such a mass of disease on the glans penis as renders it necessary to amputate that member. Whenever any sore is detected within the prepuce the part should be repeatedly washed with a dilute solution of the chloride of zinc; which will allay any irritability; remove any fœtor; and speedily heal the part. Masses of fungoid substance, weighing three or four pounds, will, in neglected cases, sometimes cover the glans. It is useless to attempt to remove a growth like this with the knife; for it will in

all probability very soon sprout again. Amputation of the penis is the only remedy; and this is an operation neither difficult nor dangerous.

The penis should be drawn out as far as possible; and then cut through at one or two incisions; as far behind the diseased part as may be deemed necessary. The remaining portion of the penis will be retracted within the sheath. Little hæmorrhage will follow; excepting that a slight bleeding will sometimes be perceived for a few days in the act of passing urine. The orifice of the urethra is kept sufficiently open by the gush of the fluid; and it is seldom that any unpleasant circumstance occurs.

WARTS.

A collection of them on the glans of the penis will sometimes make it impossible to retract that member when protruded, and render the operation just described absolutely necessary. They are frequently found upon the sheath of the penis, and extend along the groin. In a few cases they are located upon the eyelids; the nostrils; or the muzzle. The most effectual way of destroying them is by cutting them off with a sharp pair of scissors. The ligature is a tedious and uncertain mode of getting rid of them; to cut them off is the best manner of removing them; and causes not only less pain but leaves less blemish. The bleeding which will follow is not of much consequence; a little astringent wash will readily stop it; but frequently the warts will reappear, in whatever manner they may have been removed; some horses having a constitutional predisposition to throw out this species of tumour.

INVERSION OF THE WOMB.

This is a very uncommon case; and is the consequence of violent throes in parturition. The protruded mass will sometimes reach even to the ground. If the mare has not been perfectly exhausted by the length and violence of her labour; and a skilful practitioner be at hand before the uterus is excoriated; there is considerable probability of her being saved. Assistants must support the protruded mass by means of a strong cloth; while, with his arm bare to the shoulder, and well covered with oil, the surgeon, placing his closed hand against the fundus of the womb; endeavours to force it gradually back again into the vagina. After working hard, and for a long time, he may succeed: but he has to keep the parts in their situation; for the throes are apt to return under the name of after-pains; and the womb will be forced out again. There are two methods by means of which this is attempted to be accomplished.

The first, and one which never ought to be resorted to, is, to pass strong stitches through the lips of the vulva; but the after-pains may return so strongly; and the violence of the throes may be so increased by the irritation of the stitches; in consequence of which they may give way, and the womb be forced out once more.

A more successful way is to employ a proper harness made for these occasions; or by the exercise of a little ingenuity to adapt such as the stable may contain to the purpose—the object being to fasten a compress over, or, better still, to retain straps before the vulva; so as to prevent anything being ejected. Before the harness is applied; cold water should be freely thrown into the

womb, and suffered to flow out again. This is readily accomplished by means of the injecting pipe. The operation should be continued until the mare showing symptoms of pain, gives notice that the uterus has been excited to contract; for, when that has taken place it will afterwards be retained. The harness should then be fixed; and the animal treated according to circumstances. In the generality of these cases the mare will be exhausted; and stimulants will be needed in the first instance: but they must not be continued too long; as there is danger of inflammation starting up. The most speedy in its effects is one ounce each of sulphuric ether and of laudanum, blended with a pint of cold water.

The probability of ultimate success, however, depends on the practitioner being called in early; and setting to work immediately.

INVERSION OF THE BLADDER.

In some rare cases the pains have been so strong as to cause protrusion of the bladder; a circumstance that might be deemed almost impossible. The inverted bladder has been mistaken either for the uterus itself, or for a polypus in the vagina. The hand passed into the passage will soon distinguish it from the first by finding its connexions; and, as the bladder is generally inverted before parturition is accomplished, that fact alone ought to prevent its being confounded with the womb. A polypus is of a shining vascular appearance; its contents quite fill the interior; rendering the substance bulky, and its covering tense. The difference is therefore great; for the bladder when inverted is characterized by many peculiarities. If traced into the vagina, it will

be found attached to the bottom of, and only a little way up, the passage. Its inner membrane being shown when the viscus is turned inside out; this is of a mucous nature, soft and flocculent, or villous. On observation the urine will be seen to drop from its surface; and, when handling it, it will feel like a wet and an empty bag.

All ingenuity must be exerted to return it as speedily as possible. The mode of proceeding is similar to the replacement of the womb. Cold water, to every quart of which an ounce of the tincture of galls has been added, may be injected until the returned bladder has contracted. But, if it is again and again rejected the delivery should be proceeded with; after which the efforts must be renewed; and whenever it is replaced, cold water should be freely pumped into it, allowing the stream to flow back until the effect of exciting the muscularity of the organ has been produced.

If, however, the bladder cannot be replaced; the mare will ever after be subject to incontinence of urine; which will dribble constantly down the thighs, and render the animal an offensive spectacle. The bladder in these cases has sometimes been cut off; and part of the unsightliness has thus been got rid of; but the urine still drained continuously down the legs. Whenever this operation is resorted to, a ligature should be employed; care being taken that it does not enclose the ureters; but perhaps it would be more humane to have the animal destroyed.

POLYPUS IN THE VAGINA.

This also is not of frequent occurrence; but it has been found, and of immense size. Its removal must

be attempted by a ligature; attached as nearly to the root of the pedicle as possible. This ligature should be tightened daily; and in the course of three or four days the pedicle will generally be cut through; and the tumour will drop off.

Some have attempted to remove the polypus by means of the knife. The objection to this is the bleeding which will often follow, especially if the tumour is large; but, if the ligature is used, although the pedicle is thick and not readily cut through by it; the polypus may be safely taken off by the knife about an inch from the ligature. The pressure will close the vessels, and no hæmorrhage will take place; or if any should ensue, the tightening of the ligature will command it. The ligature may, however, be objected to; and a more speedy mode of proceeding desired. Then, let the practitioner firmly grasp the polypus with a pair of forceps, made for the purpose; and twist it round and round. This twisting may be continued until the pedicle gives way; or the rupture may be anticipated by the knife. Of these two methods, the use of the knife is to be preferred: because, we cannot make certain of the tumour being torn off above the twisted pedicle; and if it be not, fearful hæmorrhage is likely to ensue; and because the knife shortens the operation, and cuts short the sufferings of the animal.

CHAPTER XXV.

OPERATIONS ON THE TAIL—DOCKING.

Fashion and convenience formerly determined the tail of the horse should be shortened. The length of the portion removed depended upon the caprice of the owner; or upon that of the operator. Many breeders docked the colt a few days after it was foaled; and they acted with judgment in selecting so early a time; for the little animal is more manageable; the hæmorrhage is less; the pain is evidently less; and inflammation very rarely occurs. The operation, however, is subject to the objection that the young animal is by it deprived of that weapon; which nature furnishes for the purpose of keeping off flies.

The length of the tail being determined on, the operator searched for the nearest joint above or below. The hair which grew round the joint was cut off, and that which was growing above the joint, turned up and confined by a string. The side line was next put on, and the twitch tightened; then availing himself of the partition between the stalls, or in any other convenient way, the tail was cut off at one blow; either by the instrument made for the purpose, or, with a mallet and the carving knife.

The gush of blood was considerable. It would rarely happen that any danger would ensue if the tail were left to bleed on; but, as the proprietor might be a little alarmed at the quantity of blood lost; it was usual barbarously to stop the hæmorrhage by means of

a circular piece of iron affixed to a handle, and with a hole in the centre of it.

Should the iron come in contact with the bone, and sear it with any severity, there was danger of exfoliation taking place; or even of the bone sloughing out so far as the next joint.

In a very few cases, however, the bleeding was troublesome: then a large pledget of tow, dipped in the following styptic wash, was placed upon the stump; and using some of the long hair of the tail instead of strings, these were tied so as to retain the application firmly in its situation. After twenty-four hours the hairs may be loosened; but the tow should not be touched—it should be suffered to drop off.

RECIPE (No. 48).

Styptic Wash.

TAKE—Ergot of rye, one ounce;
Make a tincture of it, by adding twice the quantity of turpentine. Mix this with two ounces of the tincture of galls. Bottle for use.

The bleeding having been arrested, no other treatment is required in the majority of cases; and the horse will do much better at work than standing idle in the stable. This, however, was a very foolish and cruel practice. It was frequently followed by lock-jaw. It was supposed to amend the appearance of the animal; but no cruelty can make a bad form a good one. The horse's tail was shortened; but, as regards quality, he still remained such as nature made him.

NICKING.

Docking is another practice formerly fashionable; now happily abandoned. Nicking, however, was a

filthy operation, and had nothing to plead in its excuse but the supposed better carriage of the tail which was produced. A horse, nevertheless, with his tail always on the cock, was at length perceived to be a rather ridiculous object; and the practice has been abandoned: for nothing man was able to perform, could change the position of the extremity; or render that which nature had formed badly, of a good shape.

CHAPTER XXVI.

DISEASES OF THE SKIN:—WANT OF CONDITION—HIDE-BOUND—SURFEIT—MANGE—MOULTING.

WANT OF CONDITION.

THE connection between the skin and the healthy state of the horse generally is much closer than horsemen seem at all times to imagine. A soft, loose, mellow coat, easily raised from the muscular substance beneath, is considered in cattle indicative of a disposition to thrive; and in horses such a state of the integument is proof of condition: but the connection between these things and the stomach is too much overlooked. Condition in the hackney, the hunter, the race-horse, or the common cart-horse, are very different things; but they all insist upon such a state of skin as has just been mentioned.

The skin is pierced by innumerable pores; through which exudes an unctuous matter, that gives the peculiar softness to the healthy skin. If there is any peculiar mismanagement in the feeding; if, unpre-

pared, the horse is removed from the straw-yard to the full allowance of the stable: if the grooming, the clothing, or the exercise are neglected, or improperly managed; the evil effect is speedily shown by the want of elasticity in the skin, and the accumulation of scurfy matter upon it.

The treatment of want of condition will somewhat vary with the supposed cause of it. Should the horse be very plethoric, or in high working condition, a mild dose of physic may be required. From six to eight drachms of the physic mass (Recipe No. 1, p. 27) should be given. A second or third dose at proper intervals may follow, if the bowels be much confined; but otherwise, an alterative ball (Recipe No. 5, p. 36), given on eight or ten successive nights; with proper attention to clothing, temperature, exercise, and, above all, good food, will be everything required.

HIDE-BOUND.

This is not only a suspended secretion of the oily matter intended to keep the skin supple, but also feverish excitement of the contractile substance of the skin itself; and, in consequence, not only does the skin feel harsh; but it is very difficult to raise it from the muscles below. From the tightness of the covering, the horse with hide-bound has a peculiar tucked-up appearance. It is a state of the skin produced by a diseased state of the digestive organs generally.

A few tonic balls, together with a judicious allowance of oats, beans, mashes, green food, and especially carrots; good grooming, and regular exercise, will be the most effectual remedies for hide-bound.

SURFEIT.

This consists of lumps which appear on the skin of the horse, oftener in the spring than at any other season. They are sometimes scattered all over the animal; at other times they are thickest upon his neck and fore parts; or they are seen on the loins or quarters alone. Occasionally they are attended by a great itching; but in other cases they do not seem to inconvenience the animal. They usually appear with little or no warning, excepting a very slight listlessness; and they not unfrequently disappear as suddenly as they came. This is particularly the case when they seem to run in lines; and have an appearance very similar to the wheals from a whip. Sometimes, however, the eruption assumes the form of a pustule which breaks, and the viscid fluid that it contains clings about the roots of the hair; this comes off, leaving a bare place so far as the pustule had extended. The hair in process of time grows upon these spots, and there remains little trace of what has happened; but in some instances, when the pustules have been thick and large, surfeit degenerates into mange of a virulent character.

The term *surfeit* seems to refer the eruption of the skin to indigestion. There is no doubt that violent indigestion will produce in most animals inflammation and pustular eruption on the skin. Surfeit has been evidently traced to kiln-burnt oats; mow-burnt hay; or to poisonous plants: but oftener it has followed the application of some direct stimulus to the skin; as exposure to cold when the horse was hot, especially at the moulting season. Whatever be the cause, the

ature of the complaint is evidently obstruction of the ores of the skin.

It would seem to be a curious circumstance that hysic rarely does immediate good in this affection; and ometimes is decidedly injurious; but the explanation f this circumstance must be referred to the connection etween the skin and the stomach; and it is explained y the purgative, which for a while deranges the tomach and bowels, aggravating the eruption. The lterative medicine (Recipe No. 5, p. 36) will be highly seful here; and the disease will generally yield to it, vithout the inconvenience produced by physic. The vening will be the best time for the administration of hese alteratives; because the warmth of the stable luring the ensuing night will be likely to insure the ffect of the antimony and sulphur upon the skin. Some attention should be paid to the clothing of the orse; more particularly, the stable should be comfort-ble and warm.

MANGE.

This filthy and intractable disease is produced by arious causes. Ill-treated or inveterate surfeit will ake on the character of mange. A sudden change of iet will sometimes produce an eruption on the skin; hich speedily degenerates into mange. Poverty is a yet ore frequent cause. Diseases of the digestive organs ill lay the foundation for those of the skin; for it is asy to imagine that such deprivation as will debilitate he frame may produce any disease. There are in these ays very few who, from want of feeling, are accustomed turn their horses out in the winter; when the

situation is bleak and the food scanty. Horses treated so inhumanly come up starved and unfit for work; the general debility will often have laid the foundation of a violent mangy affection.

Contagion is, however, the chief source of mange. There is no disease, not excepting glanders itself, which is more quickly caught. If it once appears in a stable, in a straw-yard; or on a common, scarcely a horse will escape it.

It is sometimes difficult to distinguish between mange and surfeit; and yet it is very important that the horse-proprietor should recognise them at a single glance. When there is considerable redness on any part, changing to scurfiness as the inflammation dies away; leaving the hair thinned, the skin thickened and corrugated, this is most assuredly mange. When there are patches with much scurfiness, while the hair is thin, mange is indicated. The bare spots, which accompany surfeit, are produced by the hardening of the matter discharged around the roots of the hair, causing it to fall off; while the coat around is as thick as it was before; although perhaps not so smooth, from the want of condition. Mange, on the contrary, produces, especially about the extremities and the hind legs, a loss of hair; even where there is no eruption. A looseness of the hair, particularly at the edge of the mane, is a prevalent symptom of mange. If to these circumstances are added an almost insupportable itching; with hide-bound; sore places; and scabs here and there; a tucked-up belly; a staring coat; and an appearance of poverty, the case can rarely be mistaken.

The treatment of mange is sufficiently plain. Bleed-

ng is never required and never safe; the diseased state of the skin might retard the healing of the puncture; and the itchiness of the animal may rub out the pin, and re-open the orifice.

Physic, in drachm or two drachm doses may be administered; unless the animal is very poor, and then tonics should be given.

After this it will be desirable to give the following alterative; in order to charge the system with sulphur.

RECIPE (No. 49).

Flowers of sulphur, half an ounce;
Black antimony, one drachm:
Mix and give once a-day in the food for ten days or a fortnight.

Medicine, however, will only assist in the cure. Mange is a local disease; and must be treated locally. Sulphur, mercury, and oil of junipers are the agents which will have most efficacy here. The following ointment should first be tried. It will succeed oftener than most other applications:—

RECIPE (No. 50).

Ointment for Mange.

TAKE—**Flowers of sulphur, eight ounces;**
Common turpentine, two ounces;
Strong mercurial ointment, two ounces
Oil of junipers, four ounces;
Lard, half a pound:
First rub down the sulphur with a fourth part of the lard; then rub in the turpentine with the oil of junipers and the mercurial ointment, then gradually add the remainder of the lard.

Let the horse first be curried; as thoroughly as the tender state of the skin will permit; let all the scurf be well brushed out; then with the hand (there is no

danger to the man) let the ointment be well rubbed i
all over the horse. This should be repeated after thr
days; and, on the fifth day, the ointment which
already about the horse should, as much as possible, l
rubbed in. Every part should be carefully gone ove
On the seventh day the whole should be thoroughl
washed off with soft soap and warm water; it will the
be seen what progress has been made towards a cure
the skin will have been prepared for a repetition
these dressings; which will, in the majority of cases, l
necessary, and almost always expedient.

If, after the second course of dressings, no groun
appears to have been gained; the application must b
changed. The next remedy that should be tried is th
following:—

RECIPE (No. 51).

TAKE—Balsam of sulphur;
Oil of turpentine;
Oil of tar, equal parts:

Mix these well together, and rub them fairly all over the anima
in the manner before directed, when describing the way to use th
ointment.

In cases of mange arising from neglected or in
veterate surfeit; and which are always the most difficu
to be cured; it may be prudent to proceed at once to
very strong application; which may torment the hors
for a little while, but will often get rid of the disease.

RECIPE (No. 52).

Mercurial Soap for Mange.

TAKE—Soft soap, eight ounces;
Mercurial ointment (strong), four ounces;
Carbonate of potash, two ounces;

Smear this mixture well over the horse. After two days take a hair scrubbing-brush and warm water, and brush the hide till it is white with lather. Upon the fifth day re-apply the ointment. The dressing will generally be sufficient.

It may appear to give the horse considerable pain. It is likewise possible that some thickening of the skin may be produced; but this will shortly pass away; and when all subsides the mange will mostly have disappeared.

The practitioner, who has once been plagued with mange, will treat every cutaneous affection, more seriously than they often receive. He will be to blame if he suffers any considerable itchiness to continue without endeavouring to subdue it. He will administer a dose of physic; if it still continues obstinate, he will endeavour to persuade the owner of the horse to throw up the animal for a few days; during which he will apply the mange ointment (Recipe, No. 50, p. 189). Many a troublesome attack of mange will thus be prevented; and no harm can possibly be done by the dressing beyond the temporary loss of the labour of the horse.

Little spots of mange often appear about the tail or mane; and sometimes under the collar; which should be dressed with the ointment, and got rid of, before the constitution is affected.

The practitioner needs not to be told how necessary it is that everything about the horse, or with which he could by possibility have come in contact, should be thoroughly cleansed after the disease has subsided. Infection lurks in everything about him; infection of which he may again become the victim; and from which

other horses will not escape. Every article that i capable of being washed should be thoroughly scrubbed first with soap and water. The manger, the racks, th partitions, should also undergo an ablution with soap and water, which last should be employed as hot a possible.

A horse recovering from mange should have oc casional alteratives; also a fair allowance of green meat or be sent to a salt marsh.

MOULTING.

This cannot be considered as a disease. The changing of the coat is a natural process, which takes place every spring and autumn. It is, however, a critical time with the horse; and he frequently shows indisposition to some extent. The truth is, that the vital energy which should render him equal to his work, is partially depressed. More than the natural share of it is determined to the skin; and employed in the reproduction of the hair; therefore there is a degree of languor, and incapacity for work, about the animal: he sweats with the slightest exertion; he is partially off his feed; the pulse is somewhat quickened; and he clearly labours under a slight degree of fever.

In cases of this kind we shall do well, if we endeavour to aid nature in her effort to cast off the old coat and produce the new one. Where there is work to be done, whether by the body or the legs, the strength must be supported. Tonics are now, therefore, of service; and may be given daily while the horse is exempted from violent exertion. A couple of pints of good strong ale every day is sometimes quite as good for the horse as

for the master; and now it may be tried. Mashes occasionally—good food always; and sufficient exercise, will tend to bring the annoyance to a speedier termination.

Good grooming also is now more than ever beneficial. It will loosen the old hair, and hasten the growth of the new; and that, being once accomplished, the horse will regain his former spirits, appetite, and health.

CHAPTER XXVII.

THE TREATMENT OF EXCORIATIONS, WOUNDS, AND ULCERS—POLL EVIL—FISTULOUS WITHERS, ETC.

AMONG the more frequent excoriations are those produced by an unequal pressure of the saddle or any part of the harness, and termed

SADDLE-GALLS.

If properly treated before they become too large; or too much inflamed; or begin to deepen, they are easily cured. The saddle should be carefully examined, and all inequality of pressure taken away by padding or chambering. The only inequality which should be permitted, and that only a temporary one, should be to prevent any bearing upon the sore part.

The wound should be bathed two or three times every day with the following lotion:—

RECIPE (No. 53).

Lotion to heal the wound left by Saddle-Galls.

TAKE—Chloride of zinc, one drachm;
Water, one quart.

SIT-FASTS.

These bear a marked resemblance to the corns of the human foot, like which they are no more than an unnatural secretion of the cuticle, consequent upon continued pressure. Most persons know that corns are not easily removed; and these little horny bodies, termed sit-fasts, when once established, remain firm in their situations: hence, they have, to distinguish them from fluctuating or moveable tumours, been thus christened.

To get rid of the sit-fast is not difficult. It may be dissected out; but the wound is sometimes long in healing, and it is oftener made so by the horse being put to work before it has thoroughly closed. A blister answers better. A little of the blistering ointment ought to be rubbed upon, and a small distance around, the substance it is desired should be cast off. This stimulates the secretive surface; and causes it to pour out a quantity of fluid under the cuticle, which, being thereby separated from the true skin, comes away, and with it also the sit-fast. The blister, however, has altered the action of the part; and, when it recovers from the first effect, it will produce only healthy skin.

SUPERFICIAL WOUNDS.

Few ointments agree with the horse; wounds, whether superficial or deep, will in general be more speedily healed by the application of tinctures or lotions. The tincture of aloes is cheap, and for ordinary purposes as good as many others.

RECIPE (No. 54).

Tincture of Aloes.

TAKE—Barbadoes aloes, powdered, eight ounces;
Myrrh, powdered, two ounces;
Proof spirit, two quarts:
Let them infuse for a fortnight, shaking them well daily.

The wound should be bathed with this twice every lay. If there is no danger that the horse will lick or ibble it; or that dirt and gravel will get into it, the vound will sooner heal by being kept open than if the ir be excluded. Should the surface of the sore become nhealthy; and especially should fungous granulations hreaten to spring up; they should be washed with the ollowing lotion, before the tincture is applied:—

RECIPE (No. 55).

Healing Wash for Wounds.

AKE—Chloride of zinc, one scruple, and dissolve it in a pint of water.

If this is not sufficiently strong to repress the fungus, se a drachm of the chloride to a quart of water.

INCISED AND LACERATED WOUNDS.

The grand principle in the treatment of these wounds to close them as much as possible by *the first intenon.* This is not to be attempted immediately. The eeding should first be allowed to cease. All decided oisture ought to have evaporated; and the divided rfaces should have become sticky. Then, if the parts brought together and firmly retained in that position, rfect union will frequently take place. If it is a mple cut, the edges are to be neatly brought together d kept thus by a bandage or by sutures; but, as the

horse cannot be made to hold the wound in perfect rest, the speediest mode of union is seldom obtained in that animal; it should, however, in every case be sought to be obtained.

In a lacerated wound, some parts of it may be brought together; and perhaps a portion of them may heal by first intention. It is, however, absolutely necessary in these cases to leave a free space in the most dependent part of a lacerated wound; in order that the natural discharge may readily escape; for the major portion of the injury is certain to unite by the suppurative process.

The wound should, in the first instance, without loss of time, be carefully cleansed from dirt, gravel, and extraneous matters. If there is much bruise it should be repeatedly moistened with a lotion composed of tincture of arnica, one ounce, water, one pint. This should be continued till a slough has fallen off, or until the surface commences to discharge good pus.

Supposing the wound to be of great depth, nothing should be done so long as Nature appears to be performing her reparative task, well and speedily. If the suppuration becomes thin; does not flow forth freely; or should fungus sprout; the weaker solution of the chloride of zinc ought to be injected thrice a day. If the discharge grows offensive the solution composed of a drachm of chloride of zinc should be employed; and tonics with the food should be given to stimulate the system.

After contusion producing effusion into the cellular membrane, an abscess is sometimes formed. The horse is particularly subject to two of these.

POLL EVIL.

The horse occasionally receives a violent blow on the back part of the head, and the cellular substance of the poll becomes bruised. Inflammation follows; the part becomes hot and tender; it enlarges, and for a long period the skin above remains entire: at length it breaks, and an ulcer very difficult to heal is formed. This happens much oftener in country than in town practice; either because the roof of the stable, or the crossbeam of the doorway, is too low; thus a horse in the least degree restive bruises himself against them; or because country horses are far more exposed to brutal treatment than the owners dream of. The practitioner always looks at a case of poll evil with a great deal of suspicion, and institutes every inquiry; and the owner should never spare the fellow whose passion has caused the mischief.

The veterinary surgeon when called in to a case of poll evil should commence his treatment with the knife. Although the skin be entire, he should without delay cut down until the tumour is laid well open. By thus proceeding he will save much time; and spare the proprietor considerable expense and disappointment.

Should suppuration have commenced, or should the smallest opening only exist, he must still cut freely down upon the cause of the evil. If he be careful to avoid the surfaces of the wings of the atlas, there is no important artery to be injured. A large gaping wound may, therefore, be fearlessly made; and the tumour well cleaned out. The horse, subsequent to the operation, should be better fed; have a fair allowance of corn given to him, not abandoning, however, the mashes.

We must not, in these cases, expect to find the usual indications which denote the presence of matter. The abscess is generally situated under the expanded tendon of the splenius muscle, and will very seldom come fairly to a head. If allowed to remain, the pus, unable to break through the surface, will, by its pressure, cause absorption of the internal and deep-seated structures; producing sinuses, which have even reached the brain. Without, therefore, waiting for the tumour to become soft; or watching for the throbbing of the pulse; and the shivering of the horse; the signs of general fever, together with the duration of the case, will enable the practitioner to form a tolerably accurate opinion as to the presence of pus; and the swelling should be immediately opened. If the suppuration is left to go on and should break, much mischief will have been done, while the wound will be unnecessarily large, and will not easily be healed.

The tumour having been freely opened; the abscess should be carefully examined with a probe, and the deepest part of it ascertained; and through that a seton should be passed, coming out on the side of the neck below the tumour. Two objects will thus be accomplished; no matter will lodge at the base of the abscess for it will run out as rapidly as it is formed; and the internal surface of the ulcer will be disposed to fill up.

The tumour should be daily examined; in order to discover whether there are any little pipes running from the interior of the sac. Very often numbers of these are found; and while one is left the wound will never close. Therefore, wherever one is discovered, a seton should be passed through it. Setons should be

passed in this way through every distinct sinus; taking care to keep the lower opening free by daily drawing the tape.

This being accomplished, the course is simple; and a speedy and complete cure will sometimes be effected. In most cases it will be sufficient to wash the wound well out with the stronger solution of the chloride of zinc. This will sweeten the part which usually smells most abominably. It will also prevent the sprouting of fungus: and being changed for the weaker solution will favour the secretion of healthy pus. Nothing more will be required: but if the case does not go on favourably repeat the examination; for there yet remains something that requires the knife.

The scalding mixtures, to which so many farriers cruelly resort, are always injurious. They destroy the living surface to which they are applied; and often increase the mischief.

Effectual setons through every sinus, and the frequent application of the solution recommended to the interior surface of the abscess, comprise a safe and satisfactory line of treatment for poll evil.

With regard to the employment of the knife no hesitation should be exhibited; but every pipe, however large or small, ought to be slit up; care only being used to spare the important arteries which run upon the wings of the first bone of the neck. The opening being large, advantage is taken of it to remove any sloughing portions of tendon, &c.; and any accumulation of foul thick pus. Then mild caustic is applied to the exposed surfaces where they seem to require it; the part is afterwards treated as a common wound.

This is a very proper and efficient practice; but where the practitioner is not fitly instructed, the system of setoning is the safest.

FISTULOUS WITHERS.

If the saddle has not been properly chambered; or the padding has shifted; so that the saddle presses upon the edge of the withers; if the horse is struck violently on this part; or has a habit of rolling in its stall; this affection may be produced—in fact, any injury which can produce contusion may end in fistulous withers. In the first instance it is a swelling. A perfect abscess follows; and if that be neglected, as in the previous disease, pipes or sinuses result; and the existence of these constitute fistulous withers. Therefore any swelling upon the withers should be freely cut open: thus converting that which either is an abscess, or speedily will become one, into a common wound. Fistulous withers are quite as serious as poll evil; for the sinuses may penetrate between the shoulder and the ribs even to the chest; wherever they go they must be followed, and a seton passed through the very deepest of them. For this purpose, which involves a very dangerous operation, an instrument termed a concealed seton-needle should be employed: because the part through which the sinus travels being crowded with arteries and nerves, the use of a common needle increases the peril of the operation. This being effected, the same mode of treatment that has been recommended in poll evil may be adopted, and with equal success. The knife, however, must be boldly employed by a scientific hand. The orifice must be kept open; and where it is possible

:o do so with safety, the sinuses should be slit up. Fistulous withers are more likely to return than poll evil is; from the pressure which may be too soon brought to bear on a tender and irritable part.

WOUNDS PENETRATING THE CHEST OR BELLY.

The horse is not so subject to these as cattle are; but he is now and then staked; and occasionally gored. If the wound is on the side; its direction and locality will explain whether it has penetrated the cavity of the chest. This fact will likewise be told by a peculiar hissing sound at each act of breathing; and by a bloody froth being about the mouth of the wound. These wounds must be closed as quickly and as accurately as possible; a pledget of lint moistened in water should be put over the wound; above this a larger piece of oil-silk or macintosh; and above all a broad bandage; which last, by straps extending between the fore-legs and over the shoulder, is securely fixed in its place.

The bandage should not, if possible, be removed during the three or four first days. The wound, in a great many cases, will then be nearly or quite closed. If necessary, a fresh pledget must be put on, and the bandage replaced. The chance of healing the wound, and avoiding fatal pleuritic inflammation, is obtained by keeping the opening perfectly closed.

In wounds of the abdomen it will be necessary to fast the horse; in order to favour the return of any protruded intestine. The part that has escaped must be carefully cleaned and returned; and great care taken that no portion of it is wounded by, or included in, the sutures, by which the orifice, if large, must be brought

together. Some have advised to include a small portion of the peritoneum in the stitches, in order to secure more rapid adhesion. It must be remembered, however, that when this method is adopted there is considerable danger of inflammation; it should, therefore, be recollected; there is a mere choice of evils, and neither one plan nor the other should be carelessly followed.

In either case some means should be resorted to, in order to avoid inflammation. This, however, can only be done by attending to the symptoms that are presented; for these will vary with the nature or extent of the injury; and with the condition and temperament of the animal.

CHAPTER XXVIII.

INJURIES AND LAMENESS OF THE FORE EXTREMITIES.

SHOULDER LAMENESS.

This, in a few instances, occurs; but not so frequently as the farrier imagines. The proof of the lameness being in the shoulder, and not lower down, is the peculiar gait of the animal. The horse suffers pain at every motion of the shoulder; and therefore limits the action of the bone as much as he can; not lifting or advancing the foot; but dragging it after him along the ground. This is the principal and most general symptom. When the lameness is in the foot or leg, the food is readily lifted; in an affection of the shoulder the foot is scarcely raised at all.

Another, and even a more certain mode of distinguishing between lameness of the foot and the shoulder, is to lift the foot; and then gradually extend the limb forward. If the injury is in the foot, the horse will generally suffer no kind of pain from the extension of the leg; but if the shoulder be injured, he will exhibit very great suffering when the leg is attempted to be brought forward.

The shoulder should be well fomented; a calkin put on the heel of the shoe; blood taken from the toe of the foot or the plate vein; and a dose of physic administered. If the lameness continue after this, a liquid blister, diluted by the addition of its own bulk of oil, should be rubbed on the shoulder daily, until it causes considerable swelling; when it should be discontinued; but afterwards repeated if necessary.

Dislocation of the shoulder very rarely occurs; for the mass of strong muscle accumulated upon and around the bone, renders it almost impossible; should it, however, occur, there is no method by which a sufficient power can be applied to replace the bone.

The point of the shoulder, however, is exposed to injury from its very situation. Fomentations, with water, one quart, tincture of arnica, one ounce, will form the best application, in any serious case of bruise of this part; and there can hardly be a better one for dispersing the swelling, and removing the coagulated blood. Local bleeding will not be required, unless the suffering be extreme. Physic is best not given: but if the fever run high, a pound of Epsom salts may be dissolved in half a pail of water, and placed before the patient. If, however, the shock seems to have

debilitated the system: if the pulse be weak, but quick, a drink composed of sulphuric ether and laudanum, of each one ounce, with water one pint, should be administered; but neither bleeding or physic thought of. If any portion of the bone of the shoulder-blade, or of the fore-arm, should appear to be fractured; the whole joint should be covered with a charge, and the horse be well fed and kept perfectly quiet in a stall.

SPRAIN OF THE FORE-ARM.

The muscles of the fore-arm are occasionally sprained; the injury may be readily ascertained by the heat and tenderness of the part. The same kind of fomentation as is mentioned in the preceding article; followed by the like stimulating embrocation and rest; will be useful here.

INJURIES OF THE ELBOW-JOINT.

The most frequent injury of the elbow-joint is a tumour (capped elbow); usually at first soft, and situated on the point of the olecranon. The capped elbow arises from various causes; the most frequent is the pressure of the calkin of the shoe on the elbow; caused by an awkward doubling up of the fore-legs when the horse is lying down. The heels should be examined, and the calkins lowered.

While the contents of the tumour is yet fluid, it is best to waste no time with lotions, or washes in the hope of dispersing the swelling. Cut at once boldly upon it, and afterwards either dissect out the sac, or destroy it effectually by the application of caustic. The frequent bathing of the part with the weaker

solution of the chloride of zinc, is all that will be necessary afterwards; though frequently wounds upon the joint of the elbow are long in healing.

As the tumour enlarges, its weight often causes it to become pendulous. It likewise may change its character, and become hard or scirrhous. An incision, in the latter case, should be made through the skin the whole length of the enlargement; the skin should be carefully dissected back, and the tumour taken away entire. This is the preferable way of proceeding; but in many cases the seton will succeed. The seton (consisting of coarse tape) should be passed through the body of the swelling; and should be moved morning and night.

The elbow-joint is occasionally opened by kicking; or being cut by the broken shafts in falling; or by the carelessness or brutality of the carter. The existence of this may be suspected from the rapid and very great swelling of the joint; the extreme heat; tenderness, and lameness; and it is clearly ascertained by the glairy nature of the discharge. The treatment of this will be spoken of when "opened joints" come under consideration.

In a few cases fracture of the bone of the elbow has occurred. This is a very serious business; for, when the immense stress on the point of this bone is considered, it can scarcely be expected that union will take place. If, however, the animal is valuable, a cure should be attempted. Some very stout gutta percha should be procured; and, having rendered it pliant by putting it into a pail of hot (not boiling) water, it should then be moulded upon the sound limb, and allowed to cool. When cold, it is as firm as leather;

and retains the form into which it has been cast. Over the seat of injury a little rag should be applied; above that the gutta percha ought to be placed, and kept in its situation by means of bandages. This will form a secure support; and the rest must be left to quietness and time. Slings will rarely be needed; though they may be useful if the horse will consent to remain passive in them.

BROKEN KNEES.

Any division of the skin of the knee is known by this name; and the common cause is falling down. A simple graze or scratch may be of little consequence when rightly treated; but, if neglected, a portion of the skin may slough, which will be very serious, as it affects the value of the horse. When the knees are injured, the parts should be thoroughly cleansed; and if they are, as they generally will be, bruised, fomentations composed of the diluted tincture of arnica, should be diligently applied night and day, for four days or a week—until a slough takes place. At the expiration of that time, the weaker solution of chloride of zinc ought to be employed; and continued through the healing. When the wound has healed, if any hair be wanting, leave the reparation to time, which in a month or two will narrow the cicatrix, and so conceal the blemish. Washes or ointments will but render the deficiency permanent.

Broken knees, in fact, are no more than simple wounds; and all the directions which have been given as to the manner of treating those lesions must be applied to these.

OPEN JOINT.

Many a valuable horse is destroyed by this accident. The ligaments of the joint being cut through, two bad consequences ensue. The air has access to a cavity unused to its stimulus, and inflammation ensues: the joint-oil also, which was interposed between the bones, in order to prevent friction, having escaped, the ends press upon one another; and a still more violent inflammation is established, under which the powers of nature soon fail. Therefore the object to be accomplished is to close the joint, and that as speedily as possible; in order that the air may be excluded, and the escape of joint-oil once more prevented.

The wound must first be thoroughly cleaned; in order that it may be fairly examined, and every particle of foreign substance removed. This can only be effectually done in the first instance, or very soon after the accident has occurred. When newly opened, the joint is not sensitive; and the practitioner should avail himself of this fact to make a thorough examination. After a day has passed, however, inflammation will have commenced; and the part which previously could be probed and handled, without causing any pain, becomes so acutely sensitive, that the horse will not allow it to be touched. The nature and extent of the wound must, therefore, in the first instance, be carefully ascertained. The probe will generally determine very speedily whether the ligaments of the joint have been cut through. The peculiar jar and grating of the bone underneath, when the metal is brought into contact with it, can scarcely be mistaken.

This being ascertained, the question comes whether the opening can be closed; and this we may, unless the injury be unusually extensive, answer in the affirmative. If the orifice is large, and extends, as it were, across the knee; is much lacerated and very ragged at its edges, it will probably be a serious matter; for in such a case the tendons of the extensor muscles, in addition to the ligaments of the joint, must have been separated; and it may be merciful to destroy the horse. It certainly will be serious if the wound is between the upper row of the knee, and the bones of the arm; for a great deal of action will necessarily take place at this joint. If it be opposite to the middle row joint, the case is more favourable; for there is less action in these parts.

The old way of closing the wound is by many persons much admired; and the practitioner, who resolves to employ it, will go to work at once, before the membrane of the joint has taken on inflammation. Any parts of the wound that are much lacerated must be removed; but as little as possible should be taken away. The common firing-iron should then be taken; and brought almost to a white heat; and run rapidly over the wound; and with a medium pressure; the lines being of a lozenge form and near to each other; and particularly at the centre of the wound.

The object of this is to produce considerable inflammation, and consequent swelling; and so mechanically to close up the wound. A pledget of tow dipped in tincture of aloes must now be placed over the part, and bound down by a calico bandage four inches wide, and about four yards in length; which

must be applied as equally as possible, and not removed for six or seven days.

There must be very great swelling; and the horse must be suffering considerably in order to justify the removal of the bandage before its time; but two or three little snips in it, above and below, may give some ease.

It will seldom be found that when the bandage is first removed the orifice will have been perfectly closed; and the iron should be in readiness, and applied again; but not so extensively or so severely. The budding-iron may also be resorted to, in order more effectually and deeply to sear the edges of the central opening. Once more the wound should not be opened for a week; and even then a third application of the iron may be necessary. This plan of treatment, however, is very severe; and certainly is not to be justified by any appeal to scientific principles. The iron does no more than the bandage would do without it; for the last, quite as much as the swelling induced by the first, stops the flow of the joint-oil; and the cautery cannot be supposed to expedite the healing process. The cautery, moreover, induces a slough; and suppuration must ensue. Now, to dam up pus is one of the measures abhorrent to all modern surgery; and, therefore, it is wrong to apply a bandage after using the iron. The hot iron, moreover, is a most destructive tool. If it does no good it must do harm; and consequently it should rarely be found in the hands of the veterinary surgeon who has to deal with other people's property.

A simple bandage kept moist with cold water, and retained on for ten or twelve days, has effected a cure;

and so have many other things, for the applications used to open joints are very numerous. Quicklime; alum; sulphate of copper; the bichloride of mercury dissolved in spirits of wine; and nearly every astringent and caustic, mild or powerful, have been tried in turns; and all are reported to have been successful. All, however, are too well known to have frequently failed; and the simple bandage, firmly applied, and constantly moistened, is assuredly recommended by the comparative little trouble it gives, and the much less pain it occasions. The caustics require to be repeatedly applied; that is, they must be resorted to as often as the joint-oil appears; and not unseldom, by destroying the surrounding structures, they enlarge the orifice which they were intended to plug up; thus aggravating the very evil they were employed to remedy.

No poultice or ointment should be applied to an open joint; the simple object to be pursued is to close the opening; which they will uniformly retard. Knowing they have this effect, some persons use them in doubtful cases; that the poultice may aggravate the lesion, and, if the joint be opened, allow the oil to escape. This is a cruel folly, and should never be practised. In every suspicious case the simple bandage is the very best application; for it may prevent that which the poultice induces. If the joint-oil escapes, it is easily recognised by its peculiar odour; by its glairy nature; by it being thick, sticky and transparent; very much resembling the white of an egg.

The surgeon will be enabled to determine, at every removal of the bandage, whether he is making progress towards a cure; and he should recollect that,

although a fair chance of success will justify him in resorting to measures even so severe as those that have been described; nothing will excuse his prolonging torture when hope has fled.

The best plan of cure for open joint is, however, that which we are about to describe. After the wound has been cleansed it is to be bathed day and night with the solution of the tincture of arnica till the slough falls off. This generally is removed from four to six days; at the expiration of which time the slings must be put under the horse. The head having been tied up from the first; and the horse kept standing; he will generally take to the slings with evident gratitude. The arnica lotion is then to be cast aside; and another consisting of a scruple of the chloride of zinc to a pint of water assiduously employed for the future. This is all the process. No stench will arise from the sore. No pus will be secreted but will as rapidly escape. The horse will be put to no torture; for the cool lotion is rather pleasant than otherwise to the feverish wound. No spurious granulation will spring up; but everything will go on well. Neither fire nor caustic will be necessary; and very few precautions need be taken to secure success. Amongst these, however, are the tying up of the horse's head—the manner of applying the lotion; and the prudence of not touching the wound. In the first place; the head must be so tied up, and the slings so fixed, that the animal may not either strike or rub his knee against the manger, or any substance in front of him. In the second place, the wash is not to be dashed upon the wound; but a sponge is to be saturated with the solution, and this sponge is to be

squeezed dry above the sore upon a sound part of the leg. The liquid is then to be suffered to trickle over the joint. And in the third place; although a bunch so large as a man's closed hand should form in front of the injured part, it must, upon no account be touched or in any way disturbed. Everything, in short, ought to be done to promote and to preserve such a growth. It is coagulated synovia; it is plugging up the orifice; and, when that appears, the main difficulty is surmounted.

The mode of cure is so sure, so speedy, so humane, and so cleanly, that it requires no word here to recommend it. The joint is generally healed in a month, or in six weeks; and in another period all blemish, supposing the injury not to have been unusually severe, has disappeared.

SPEEDY CUT.

Another serious evil presents itself immediately below the knee, in the form of a scar; wound; swelling; or bony enlargement; upon the inside of a leg. This is mostly found in horses with high action; the hoof or edge of the shoe being struck against the inside of the opposite leg; the blow is sometimes so violent, and the pain so great, that the horse suddenly drops, to the imminent danger of the rider. The speedy cut materially diminishes the value of the horse; for such an animal can never be considered as safe.

Should the injury be fresh, the part must be protected, and treated as a common wound; if the place has healed, but still continues sensitive, the tenderness may be abated or removed by means of cooling applications; or, should it be accompanied with much

enlargement, perhaps the swelling may be reduced by the application of blisters; but, if the evil is ever to be prevented, it is by filing away any projecting edge of the shoe; by rasping down the inside quarter of the hoof; by the use of a shoe one side being higher than the other, and the nails confined to the outer side alone; and especially by not over-weighting the horse, or putting it beyond its pace.

SPLENT.

Splents, strictly defined, are ossifications of a peculiar fibro-cartilaginous substance, by means of which the small bones are joined to the large bone of the leg; horsemen, however, agree in calling any little bony tumour below the knee and above the pastern a *splent*. Their causes are various: early and hard work; overweighting of the horse; and external violence.

The most general cause of splents is hard trotting under a heavy weight. Young horses are most subject to them; for then the parts are not sufficiently consolidated to endure the strain which an older animal might sustain without injury. The inside of the leg, being most under the centre of gravity, is the part where they generally appear. Inflammation is first produced, accompanied with heat, swelling, and pain. The horse evinces pain when the part is pressed; he does not, when in motion, freely bend the leg; but often exhibits that peculiar action which is denominated "dishing." Lameness, of course, is present; but, as a general rule, it exists only while the inflammation continues. This is, in a great measure, consequent upon the swelling rendering tense the periosteum; or

fibrous covering of the bone, beneath which the enlargement is situated. When the inflammation abates, the swelling is converted into bone; and with the change sensation departs. The horse becomes sound; the splent being of no further importance than so far as its size may be a deformity, or expose it to being struck; and so far as it may interfere with the springy action of the animal, which, however, it seldom does to a sensible degree. In some few cases, however, a splent will be so situated as to interfere with the knee-joint, or some of the tendons of the leg; it then causes either imperfect action; or, it may be, permanent lameness. If it does not interfere with the action of the joint, or the play of any ligament or tendon, and is not in an active or growing state, a splent may be unsightly—but it may be of little further detriment to the horse. Some knowledge of the anatomy of the leg; or considerable observation as to the effect of splents; is necessary to decide on their importance, and to define the hopes that may be entertained from treatment.

If they are productive of lameness, poultices or fomentations having been first employed to abate the inflammation, the hair should be cut very closely around the cause of mischief; a little mercurial ointment may be well rubbed in for three or four days; or, what is still better, a compound of iodine with mercurial ointment, to which a blister should succeed. The blister should be actively rubbed in on the fourth or fifth morning, the former application having been cleanly washed off. If one blister makes no change in the size of the splent, another should be applied: but

beyond this it is not worth while to go; for it will often happen that the effect of the blister is not immediate; but begins to become apparent a week or a fortnight after the practitioner imagines he had been labouring in vain.

In some cases, however, it may be desirable to combine the benefits sought for in the treatment just described: and, when this can be attempted, the following ointment is often used with the best effects.

RECIPE (No. 56).

Ointment for Splents.

Iodine, one drachm;
Mercurial ointment (strong) one ounce;
Powdered cantharides, two drachms;
Spermaceti ointment, two ounces.

Rub the ointment well down with the spermaceti; to these join the iodine; and, having thoroughly mixed them, let the cantharides be added. A portion of this may be applied with a half hour's friction daily, till the place becomes sore; when it should be for a time discontinued; but again resorted to, so soon as the condition of the tumour permits.

These means will not, however, always succeed; but sometimes an operation gives speedy relief.

A small incision is made through the skin below, and also above the splent; then a blunt seton needle is passed in at one opening, and brought out at the other; so as to make under the skin a channel; into this a bistoury is introduced, and the operator cuts down on the splent so as to divide the periosteum; then, withdrawing the knife, he inserts from the upper to the

lower incision a small seton, which is allowed to remain in for ten days or a fortnight. This operation will sometimes succeed in removing the lameness; and, in general, materially diminishes the enlargement of young horses.

Splents are oftenest seen in colts; generally they are taken up in old horses by the process of absorption which we have little power to hasten or retard. A far more serious injury of the leg is

SPRAIN OF THE BACK SINEWS.

This is often occasioned by the horse being overweighted, and ridden far and fast; especially if his pasterns are long: but it may occur from a false step; or from the heels of the shoes being too much lowered. The thin-heeled shoes that were once in fashion did irreparable mischief in this respect.

Sprain of the back sinews is detected by swelling and heat at the back part of the leg; puffiness along the course of the sinews; extreme tenderness, so far as the swelling or the heat extends; and very great lameness.

The first object is to abate the inflammation; and this should be attempted by local applications to the back of the leg; in the form of fomentations, sufficiently hot, and frequently repeated. The solution of arnica is an excellent and a fashionable application to injuries of this kind. Or a poultice may be made with the tincture and placed upon the part; at the same time as much strain as possible should be taken from the sinew by putting on a high-heeled shoe.

The horse should be put upon mash diet for a day or two. When, in the course of a short time, the leg will bear a little pressure, a different course should be

pursued. The inflammation having been abated; the practitioner should think of reducing the enlargement, lest it should become organized or confirmed; when, if it did not perpetuate the lameness, it would at least interfere with the motion and limit the action of the limb.

It is too frequently the absurd practice of the farrier to attempt this by means of hot oils or blisters, immediately after the accident, and before the inflammation is subdued. By doing this he increases the inflammation, and aggravates the evil; often rendering a thorough cure impossible.

The first application, with a view to promote the absorption of the matter thrown out, should be pressure; cautiously applied at the beginning, and only increased as the animal can bear it. The bandage being wetted with water, in order that the leg may be kept cool; thus, not only the inflammation will be lessened, but the tone and strength of the parts in some degree restored.

In slight cases, when the tenderness, heat, swelling, and lameness have all subsided, the horse may go to work, if he does not go too far or too fast: but, if the strain has been severe, considerable enlargement will remain after the absolute lameness has disappeared. This will materially interfere with the free and safe action of the limb; therefore, and especially where quick work is required, it will be expedient to blister the leg, and throw the horse up for a couple of months.

WINDGALLS.

At the back of the leg, just above the fetlock joint, there are several little sacs, containing a fluid like joint-

oil. Their use is to facilitate the motion of the variou structures upon each other; but, if irritated by ex cessive work they enlarge, and appear as swelling These constitute windgalls; which rarely occasio lameness, unless they are very large or appear suddenly being then evidently produced by violent action, an attended with inflammation. They are, however always blemishes; and generally pretty certain evidenc that a horse has done some work.

The mode of treatment is the same as in sprain o the back sinews. When there is much heat about th part, fomentations will be useful; but the windgall wi sooner bear pressure than the sprained sinew will; an a flannel roller should be applied; if wetted it will b of more service.

If the windgall will not yield to this; the commo liquid blister may be lowered with four times it quantity of olive oil, and some of it daily rubbed i over the enlarged sacs. This, which is called *sweatin down* the windgall, keeps a constant stimulus upo the part; not sufficient to blister or to cause lameness but enough to rouse the absorbents to more powerfu action: should, however, any soreness be induced the embrocation must be omitted for three or fou days.

The windgalls, however, are not so difficult to remov as to prevent returning upon the slightest work. Fo this reason these enlargements in all horses kept fo actual service, not for show, had better be let alone; a the proprietor will thus spare himself much loss i keep; expense in treatment; and very probably con siderable disappointment.

SPRAIN OF THE FETLOCK JOINT.

Fortunately this is a rare occurrence; but, when it does happen, it is a serious business, because of the pain produced by the action of the joint: of the inflammation being long kept up, and the heads of the bones being apt to enlarge; constantly interfering with the use of the foot: while the injury is liable to be renewed from the slightest cause. It may be distinguished from sprain of the *back sinews*, by the heat and tenderness and enlargement being clearly around the fetlock, and in a manner confined to it.

The mode of treatment is still the same. Fomentations will be as effectual as in strains higher up; and these must in their turn give way to pressure and cold water. Firing is never necessary; but the horse can seldom be safely returned to his work without an active blister.

RUPTURE AND SPRAIN OF THE SUSPENSORY LIGAMENT.

At the back of the fetlock are two little irregularly-shaped bones, attached to the joint, and forming part of it; they are called the sessamoid bones. A ligament, descending from the back of the knee, and pursuing its course immediately behind the large bone of the leg, at this place is attached to the upper part of these bones; and also divides, being ultimately inserted into, the small pastern bone below. It is called the *suspensory ligament;* because the weight of the body is, when the foot is first put to the ground, in a great measure received by it; whereby much of the concussion that would be imparted to the bones of the leg is prevented.

It must have been observed how the pasterns and the fetlock yield; how these parts are brought almost to the ground in the rapid action of the blood-horse; particularly if he has long pasterns. This ligament, though more muscular than elastic, sustains the weight of the horse; for the principal yielding is confined to the pastern. The foot being again lifted; the ligament contracts to its natural length, and the sessamoids which had been forced downward, occupy their former places. In this gradual play of the suspensory ligament consists the easy and pleasant action of the horse with oblique pasterns. In the horse with short and upright pasterns, which are capable of little motion, the weight and concussion are thrown more on the bones of the joint; the action is jolting; hence the liability to sprain and enlargement of the fetlock joint.

This ligament, as it may be easily imagined, is subject to serious injury. It is sometimes ruptured; and the horse is said to *break down*. The fetlock, no longer supported by the suspensory ligament, touches the ground; the lameness is dreadful. This lowering of the fetlock will distinguish rupture of the ligament from sprain of the back sinew. The injury, however, in breaking down is seldom strictly confined to the suspensory ligament; but the integrity of the pastern joint is destroyed, and other structures are torn asunder.

This is a serious, and, generally speaking, an irreparable injury; for it will be almost impossible to keep the divided edges of the various parts long enough in contact for reunion to take place. A shoe with a very high heel must be put on; the leg must be well

bandaged; and perfect quiet must be enjoined. Inflammation may be generally kept under by the application of the cold solution of the tincture of arnica; but no stimulating application must be used until all inflammation is removed; when the leg, having been repeatedly rubbed with the solution, sweating oils may be freely used.

A much more frequent injury than that just described, though fortunately one much less severe, is a strain and enlargement of the suspensory ligament; sometimes on one, but often on both sides. The treatment should be similar to that before advised; that is, first to place on a high-heeled shoe; then to remove the inflammation by cooling lotions; and ultimately to stimulate the enlargement.

CUTTING.

The inside of the fetlock is often bruised and cut by the opposite foot. This is particularly the case in young horses, before the joints attain their level action; for the same reason horses when they are weak or tired frequently cut; for the legs can no longer preserve their perpendicular motion.

There are few things more difficult to cure than cutting: the inner heel has been raised or lowered; and the outer one raised or lowered also; in both cases occasionally with good effect; but, oftener, the horse continues to cut, no matter to which side the bearing is thrown. That which has oftenest succeeded, is the level paring of the foot, with the level surface and bearing of the shoe; at the same time an additional nail being put on the outer side, and only one nail on the inner side of the shoe; and that one near to the toe.

This *unfettered* way of shoeing, while it gives perfec security to the shoe, permits the foot in some degree t expand; hence straightforward and safe motion is th more likely to be preserved. At the same time an projecting edge of the shoe beyond the crust should b carefully filed down; and the inside quarters, and par ticularly if there is any appearance of bulging, should be gently rasped; for the horse as often bruises th fetlock with the side of the opposite hoof as he cuts i with the edge of the shoe.

SPRAIN OF THE PASTERN JOINT.

This joint is not often injured; but has sometimes been sprained. The seat of the injury may be detected, as in the other cases of a similar nature, by the heat, swelling, and tenderness; the same course of treatment must be pursued.

SPRAIN OF THE COFFIN JOINT.

The symptoms which are strictly proper to this injury can hardly be stated; since, whenever the coffin joint is sprained, the surrounding structures must certainly be involved. Heats, swelling, lameness, tenderness upon pressure, and disinclination to bend the joint, will be present. The treatment should consist in bleeding the toe; after which the foot should be bound up in cloths moistened with tincture of arnica; and to that some stimulating embrocation should succeed.

RING-BONE.

From the great action of the pastern joints, and the injuries to which the ligaments are exposed, inflamma-

tion is often accompanied by the deposition of bony matter. Ring-bone, so called because it sometimes extends round the pastern, is the frequent consequence of sprain. Sometimes it begins as high up as the superior articulation of the larger pastern bone; oftener about the joint formed by the two pastern bones; and sometimes it involves only the lower pastern bone. It is in consequence of inflammation of the ligaments, that bone is deposited under them; and sometimes portions of them are enabled to change the nature of their structures. The lateral or side ligaments are those that are oftenest or soonest affected; ring-bone is then discovered, in its early state, by a rounded hard projection on each side immediately above the coronet.

Ring-bone is always accompanied by lameness at the commencement: but the extent of the after lameness depends on the degree in which the bony tumour interferes with the action of the joint. In some cases it goes off altogether, particularly in the hind feet; where the concussion is not so great, and the inflammation is not generally so intense. In the fore feet, which support more of the weight of the body, and are liable to severer injury, the bony deposit is usually greater; and commonly involves one or both of the pastern joints. Lameness, and of an incurable nature, is the result if side bones also exist; or the ring should extend under the cartilages; and it not unfrequently happens that the coffin joint, being surrounded by unyielding bone, is entirely lost.

It is of little use to meddle with ring-bone unless we begin at its commencement; and then it should be at-

tacked in good earnest. Local bleeding, and lotions, should be first employed; the inflammation being removed, setons should be inserted; or the part should be stimulated. All, however, will often fail; for the incessant action of the parts, and the pressure on them, render it very difficult to arrest the progress of the inflammation. In a confirmed case of ring-bone, especially where the joint is lost, it would be the height of cruelty to subject the poor animal to the useless torture of the iron; and when side-bones and ring-bones exist together, neurotomy is the only means which can afford relief.

GROGGINESS.—KNUCKLING, ETC.

This is a frequent tremulous motion of the fore leg, with a bowing of the knee, and some degree of knuckling of the fetlock; while upon the slightest tap behind the knee the joint yields. There is an evident loss of power and energy in the limb; and though in some measure a natural defect, it is often a proof that the horse has been hardly worked; and it is probable that he can endure little more exertion.

The various structures which compose the limb have been overtaxed; they have become weak; their debility preventing the animal from giving to the leg that fixed position which the member otherwise would assume. There is little remedy for it but stimulation, or the constant application of cool lotions with comparative rest, while the horse enjoys the salutary and bracing, and not sufficiently appreciated influence, of cold on weakness of the legs and feet.

FRACTURES.

A horse is often condemned without cause, on account of fracture of the bones of the fore-legs. Either the practitioner dislikes the trouble; or the proprietor is loth to make the proper remuneration. The only circumstances that will justify the abandonment of a horse with fractured leg are when it is a compound fracture; the integument and muscular parts being lacerated as well as the bone broken into numerous pieces: then, indeed, the case is hopeless.

The cure of fracture of the shank-bone may be undertaken with fair prospect of success. All that is to be done is to cut the hair closely off the part; to bring —and as gently as may be—the divided edges of the bones in apposition: to retain them there by means of splints, which shall reach a considerable way above and below the injured part.

This should be done in the box or stall, in which it is intended that the horse should remain. He should then be left as much as possible to himself. He will take care of his broken leg; he will not press upon it for many a day; and, not at all, until he can do so without much pain; and, in many more cases than some have imagined, the fractured bone will unite, and the horse will do well.

A sling should not be used in the first instance; but the horse should have his head tied up for four nights, and then the slings be offered, and on no account be continued too long. The sad excoriations and other inconveniences occasioned by the long use of the sling have, more than

anything else, brought the treatment of fractures into disrepute.

Fractures of the hind extremities are more serious affairs, and should be undertaken with greater caution.

CHAPTER XXIX.

INJURIES AND LAMENESS OF THE HIND EXTREMITIES.—FRACTURE OF THE HAUNCH.

The point of the hip, or haunch, is exposed to considerable danger from accident or brutal force. Either in consequence of falling; or being run violently against; or receiving a heavy blow; tuberosities of the haunch may be broken off. There is an immense mass of powerful muscle here; so that it would be utterly impossible to keep the disunited pieces of bone accurately together; yet nature will do much towards it; for if, after the inflammation has a little abated, a thick charge be put over the loins, the tuberosity may some months afterwards be found connected with the part from which it was separated. There will always, however, be some difference in the appearance of the two hips; but very rarely any lameness; and the horse will perform its work with tolerable ease.

SPRAIN OF THE ROUND BONE.

One would think it was impossible that the ligaments connecting the thigh bone with the haunch could be subject to sprain; the enormous mass of muscle by which they are surrounded seems to bid defiance to any

power of extension. Dislocation, or even strain of this joint, does not occur so often as the groom imagines. Lameness from sprain of the round bone is sometimes characterized by the horse dragging his toe behind him; and other times by a very peculiar rotatory, indecisive motion of the limb. The best proof, however, of the lameness being seated here is the pain evinced by the animal when this joint is firmly pressed upon. There is seldom much enlargement, and the injured part is too deep for the heat to be always felt.

If washes are applied at all in the treatment of this lameness, they should be as cold as they can be procured, and frequently repeated; but it will generally be the best practice to have immediate recourse to stimulants. Rest is absolutely necessary; and, should the lameness long continue, a charge should be placed on the part; the horse being turned out.

STIFLE LAMENESS.

Than the round bone there is much oftener lameness in the stifle; and there are few places where the actual cause of lameness is so deceptive, or so little understood. There is seldom sprain of the joint; but frequently dislocation of the patella; or of that which really is the knee-cap. The horse is found standing with his hind leg thrust backwards as far as possible; resting upon the fetlock: the pastern being perfectly bent; and the limb fixed. The animal is evidently in great pain; perspiring profusely; and heaving sadly at the flanks.

The case, however, is easily treated. Some persons proceed in a very summary way: they give the horse a lash or two with a whip, and by his violent effort to

get away from the punishment, the limb sometimes is flexed, when the knee-pan returns into its place. This, probably, would not succeed in many cases; for there is some danger attending so rude an operation; the ligaments of the patella may be sprained, or even ruptured, by the sudden and violent action of the limb.

The dislocation can be reduced without much trouble or any danger. It always takes place outwardly. An assistant should lift the lame leg, and carry it forward, while the surgeon presses upon the edge of the patella; the bone will be returned to its natural situation with a facility that would scarcely be expected. If some hours should have passed between the dislocation and its attempted reduction, the ligaments will have been weakened; and the bone sometimes slips out again as soon as the pressure is removed: it will always, therefore, be prudent to let some one remain pressing against the part for several hours, and to bathe the joint with cold lotion; or to stimulate the part at once, if the bone has previously been subject to dislocation. Should not the ligaments even then have regained sufficient strength, the cautery will probably be needed. Much inflammation, and enlargement of the joint, and even fracture of the patella, arise from contusions received in hunting, or when a horse is running away: rest, fomentation, and, if unavoidable, blistering, are the proper remedies; but fracture of the patella seems to be beyond the aid of veterinary surgery.

The muscles of the thigh, generally, and particularly of the inside of it, have sometimes been severely sprained in hunting, when the country is deep and the

fences high. Rest and fomentation, with gentle medicines as required, are the remedies here.

THOROUGH-PIN.

Above the hock we sometimes find a soft swelling. It projects on both sides, and is therefore called a *thorough-pin*. This tumour is situated above the point of the hock; and in general it is connected with the hock joint itself. It is not necessarily a cause of lameness; it comparatively seldom is so; unless, by its bulk, or by its being nearer to the tendon above than to the bone, it interferes with the action of the joint.

If the tumour is small, and there is no lameness, it is better to let it alone; but if it is evidently increasing, or there is the slightest lameness, an attempt may be made to sweat it down, or the blister ointment (Recipe No. 21, p. 73) may be at once applied. A still better treatment is the frequent application of the following ointment:—

RECIPE (No. 57).

Take—Biniodide of mercury, one part;
Lard or palm-oil, seven parts:
Rub together in a mortar.

About the size of a hazel-nut to be rubbed on the part at a time; and to be repeated daily until a considerable scurf is produced.

Constant pressure, however, kept up by means of a kind of truss made for the purpose, has been found to answer more frequently than any stimulating applications: which, in too many instances, have increased that which they were intended to diminish.

CAPPED HOCK.

At the point of the hock a tumour occasionally appears; at first soft, and containing some fluid. It is usually the consequence of violence; and it is most frequently produced by the animal's kicking. It is rarely accompanied by lameness; and, when the action of the joint has been impeded, that has oftenest proceeded from injury inflicted on the hock itself. It should, however, be removed; for it is apt to increase with a slight repetition of the first exciting cause.

The inflammation should be reduced by cold applications; and, this being accomplished, the groom should hand-rub the part for several hours in the course of the day. The friction should be persevered in for a considerable time; and a small quantity of the tincture of iodine may at the same time be used. On no account should a seton be passed through a swelling of this nature; and blistering or firing generally do harm. The tumour may, however, be opened; but if this is done, the sac should either be dissected out or destroyed with caustic; else so much irritation may ensue as will endanger even the life of the animal.

BOG-SPAVIN

consists of a synovial distension of the capsular ligament of the upper joint of the hock. When it appears suddenly, and is considerable, it is attended with lameness, from inflammation of the joint; but otherwise it is generally free from both lameness and inflammation.

Little can be done in these cases, beyond abating the

inflammation: with which object a high-heeled shoe should be put on, and the part constantly wetted with the solution of the tincture of arnica. Blistering, setoning, and firing are of no use. When the first symptoms have subsided, the ligaments having accommodated themselves to the enlargement, beyond the disfigurement it occasions, bog-spavin will be of little consequence.

BLOOD-SPAVIN.

This consists of a varicose or an enlarged state of the vein which crosses the front of the hock. It is never seen unless bog-spavin exists; for it is the distension of the upper joint of the hock which, pressing upon the vein, and preventing the blood from passing onward to the heart, causes the vessel to dilate. Medicine is here of no use, and external applications are thrown away. The only means of cure is to take up the vein; and an operation is required. A ligature is passed around the vessel, both below and above the enlargement; and the annoyance is got rid of.

BONE-SPAVIN.

From a consideration of the anatomy of the leg, it will be evident that the weight of the horse is not equally borne by all the bones; a more than proportionate share is cast upon the small bones on the inside of the hock. These also have to bear the greater part of that concussion to which the hind limb is subject. The inner bone supports considerably more than its share of the burden. It has been shown that this was the case in the fore-leg, and that in conse-

quence of it the horse was subject to splent. In the same manner the smaller bones of the hock on the inner side, together with the ligaments which unite them, become inflamed: in consequence of this inflammation the ligaments become ossified, and there results the bony tumour on the inside of the hock which is denominated spavin.

This is always a source of pain and lameness at its first formation; but the continuance of the lameness depends on the progress of this bony growth, and its interfering with the action of the tendons. If it is found principally below, and does not spread towards the front of the joint, the bony tumour may acquire a very large size, and not produce lameness. The continuance of this exemption from lameness, however, will be very uncertain; for no one can tell, when this habit of throwing out bony matter is once established, what direction it will take, or what mischief it will effect.

The treatment of spavin must be energetic. An active blister should at once be applied; and repeated again and again; but, in obstinate cases of lameness, the cautery must be resorted to; the iron being even carried so deep as to touch the surface of the bony enlargement.

A singular, and yet sometimes an effectual way of relieving, and frequently removing the lameness of spavin, is putting the horse to the plough. The slow action of the limb in ploughing can be borne without very great pain; at length ossification being perfected, the parts become fixed; and the leg is used without pain.

The farrier once used to have recourse to the chisel and mallet in order to remove this and some other bony productions; the spavin was sometimes punctured with the awl, or perforated with the gimlet; but this, in the great majority of cases, only added to the inflammation; and thus aggravated the evil which was previously disabling the limb.

OCCULT SPAVIN.

In some cases the severest treatment will not remove the lameness of spavin; in others there will be lameness clearly referable, by the action of the horse, to the hock; but it will be unaccompanied by any external bony enlargement. The cause of this was long unsuspected: at length it was recollected by Mr. Goodwin that the joint consisted of several bones, having some slight motion upon one another; each bone being invested by its own synovial membrane, so as to form a separate perfect joint; wherefore it began to be suspected that the concussion which excited inflammation and ossification, might produce injurious effect on some of these little, but complicated joints. The examination of some horses after death, that had laboured under obscure lameness in the hind leg, set the matter in its proper light; for there was found, deep in the internal part of the hock, inflammation of the membranes of these little joints, going on to caries of the bones, without any external appearance to indicate such an affection. In other cases equally obscure, the same diseased appearance has been found in the upper joint of the hock, in which the principal motion takes place.

It is of the utmost importance to distinguish between

bony and occult spavin; the first can be relieved so as to render the horse serviceable to its owner; but the last is too frequently unaffected by any means which science has hitherto discovered. In bone spavin the horse comes out of the stable stiff, but after a little while the action becomes free; he may be a little lame at first, but when he gets warm he grows sound. The horse suffering from occult spavin comes out lame, and becomes more lame every step he takes. The lameness is excessive—it is always present; the animal continuously rests the limb, and exerts himself to cast no weight upon it. These peculiarities distinguish the two diseases; which resemble each other only in the circumstance that during either the horse does not raise the leg freely, but scrapes or strikes the toe against the ground. The two, however, are well separated by the one being accompanied by a bony enlargement, and the other exhibiting nothing of the kind; and also by the lameness in the one instance being generally relieved by treatment; while in the other case the evil too often remains unaffected, however energetic may be the means employed for its removal.

In occult spavin, there being ulceration and loss of substance upon the internal surfaces of the lower bones of the hock joint, we cannot hope to heal the lesion, which is deeply seated, and far beyond our reach. Ulceration, however, is the result of chronic inflammation; therefore, could we so aggravate the disease as to render it acute, instead of loss of substance, we should have bone deposited; and by means of this the ulcerated surfaces would become united. Some portion of the freedom of the joint would be lost; but the pain would

depart. The bones which before were diseased, and at every step grated upon one another, would grow together and form a solid body: this is that which we seek to bring about.

The horse must be thrown out of work, and turned out for a run, not of a few weeks, but of several months. Setons must be inserted; and every means resorted to to keep them in as long as possible. The hock must be blistered constantly; one-half of it being always kept in a state of vesication; thus the outer side is first blistered; and when that seems to be getting well the inside is blistered; after which the outside is again attacked; and so on for many months. The diet must be liberal; and even tonics will be of service.

It may be half a year before any improvement is seen; and then a like period should elapse before the animal is put to work, or, at all events, before it is put to fast work.

The foregoing treatment, however, supposes ulceration to exist; but in cases where inflammation of the synovial membrane alone is present the remedies must be depletive. Perfect rest; spare diet; occasional physic; bleeding from the toe or metatarsal vein; setoning; blistering; and even firing may then be employed.

ENLARGED HOCK.

Either from inflammation among the small bones of the hock; from debility threatening farcy; or from external violence; the whole of the joint begins sometimes to enlarge, accompanied by much heat and lameness: by the application, however, of proper means, the heat and lameness are removed. These means con-

sist of continual rubbing in of soap liniment; a mild dose of physic; followed by tonic balls; gentle exercise; and good food. If the enlargement of the hock is permanent the horse should be regarded with considerable suspicion. He may be capable of common work; but he will often fail if much extra exertion is required from him; or he may suddenly be attacked by the acute form of farcy.

CURB.

This is most frequent in young horses, whose joints have not attained their full strength. A young horse may go out of the yard perfectly sound; he gallops over heavy ground; leaps over a fence; is pulled up and thrown upon his haunches; or he makes some sudden exertion; and he immediately becomes decidedly lame in one of the hind legs. Upon being closely examined, there is found to be great tenderness at the hinder part of the hock, three or four inches below the point of it; and in a few hours afterwards is seen an enlargement at this place.

The first object to be effected is to remove the inflammation. A high-heeled or patten shoe should be placed upon the foot, so as to throw the weight off the affected part; the hock should be bathed with the solution of the tincture of arnica; at the same time, if the lameness is very acute, a dose of physic should be given, and absolute quietude enjoined.

In three or four days the heat, which always in the first instance accompanies curb, will probably have subsided, and the lameness almost have disappeared; but there will remain a slight enlargement of the part.

Stimulating applications should now be resorted to. The liquid sweating blister (Recipe, No. 24, p. 77) lowered, as recommended in the same page, will generally effect both purposes; but, should the lameness not readily disappear, a direct blister should be rubbed in. In some cases the enlargement continues in spite of our most energetic endeavours to remove it. It should, however, in all such instances, be remembered that, although the enlargement of curb will occasionally remain for several months in despite of the blister, it disappears as time progresses. Curbs, however, are apt to return if the horse is sent to work too soon; and it is now a well-established fact, that the predisposition to throw them out is hereditary.

SWELLED LEGS.

This is a frequent and a most troublesome complaint. The cause is often exceedingly difficult to detect; and the disease becomes so inveterate, that the practitioner has little prospect of completely eradicating it.

The fore-legs occasionally enlarge; but oftener, and to a much greater extent, the hinder ones are disposed to increase in size. A horse is sometimes left in perfect health at night; and is found, on the next morning, with one or both hind legs enormously enlarged. The skin is tense and glistening; it is hot, and upon the inside of the thigh exceedingly tender; the horse cannot bear to have it touched; he catches up his leg suddenly; the limb moves as if the lower part of it had no joint; and, in the convulsive effort to snatch it out of reach, the animal not unfrequently loses his balance, and threatens to fall on the examiner.

This complaint, which is known by the name of *weed* in many parts of the country, is evidently a sudden and a very intense inflammation of the cellular tissue. A considerable degree of general fever often speedily follows; the pulse quickens; the mouth is hot; and the horse is entirely off his feed. Horses of the coarser breeds are peculiarly subject to this; especially if, after being regularly worked, they are suffered to stand in the stable.

This apparently formidable species of swelled leg readily yields to proper medical treatment. The leg should be frequently fomented with warm water; a dose of physic administered; which should be followed by diuretic medicine. The swelling, however, having subsided, and the tenderness having gone off, the legs should be well rubbed, and then lightly bandaged; gentle exercise should be used; and tonic medicine administered, for the disease is apt to return.

If an old horse, or a young one that has been overworked, is suffered to stand a day or two in the stable, his legs often fill, but without pain or heat. The legs of some horses regularly swell every night. This is connected with debility, either general or of the part. The case must be considered very attentively before any measures are adopted. The horse may be too highly kept; but his legs are suffering from occasional overwork; then mild diuretics; regular exercise; tonics; hand-rubbing; and bandages will be the proper means to be adopted; decreasing a little the quantity of food; giving an additional quantity of oats and a few ground beans will afford relief. The use of the bandage is an excellent thing in these cases; and has often gradually

strengthened the vessels of the part, rendering the leg eventually fine.

Frequently an enlargement of the leg is connected with general debility. The horse is recovering from serious illness; or he has been half-starved; or he is generally weak; and the weaker parts, where the blood circulates most feebly, naturally yield. A daily mash should be given; a fair allowance of corn, with a few old beans; carrots, if they can be procured; gentle and regular exercise; small doses of cantharides, varying from three to five or six grains, and a few tonic diuretic balls (Recipe, No. 36, p. 142). Everything should be done to increase the strength of the system generally; and the vessels of the extremities may ultimately regain their proper tone.

This treatment will be particularly proper if the legs swell at the spring and fall of the year. The horse is then shedding his coat; a process which is always attended by some debility. Tonic balls will here be exceedingly useful.

In every case, however, of swelled legs, a great deal more depends upon management than on medicine; and there is nothing so likely to be injurious as the frequent use of diuretics, of which many grooms are particularly fond. The staling-ball of the stable is the fruitful source of debility (the worst cause of swelled legs): it first weakens the urinary organs, and loss of tone in the system generally succeeds.

GREASE.

This is irritation of the skin and glandular structure of the heel. It may be traced to various causes. One

of the most frequent is the washing of the heels when the horse comes in from work. He is hot all over, and the heels are as hot as any other part; but the harness is scarcely taken off, before cold water is sluiced plentifully over the legs; under the notion of clearing away the dust that hangs about them. That could be excused, if the wetted legs were rubbed thoroughly dry afterwards; but the groom has too much to do, or is too idle for this: he, perhaps, sponges off a portion of the wet, but he leaves on a great deal more; and the cold process of evaporation is immediately established. There is nothing so debilitating or so likely to induce an unhealthy irritability; and it is the prevailing cause of grease.

Washing the heels should be strictly forbidden in every well-regulated stable. After the horse has stood a quarter of an hour, during which time the groom may be employed about the harness or some of the arrangements of the stable, a great deal of the dirt will have dried upon the leg, and may be easily brushed off. An hour after that the rest may be brushed away; and a little hand-rubbing will restore the part to its natural glow.

When the vessels of the heel are weakened by the absurd system of washing, let it be supposed the parts are exposed to the common exciting causes which confirm irritability; the horse stands in a hot stable, with a draught of cold air continually blowing upon his heels; he remains day after day in the stable unexercised, until he has swelled legs: all this while, the horse has been too grossly fed; and has generated in his system a tendency to disease, which is naturally ready to settle in the weakest part.

Even under careful management, the heel is, and must be, a weak part: it is farthest from the centre of circulation; the fluids have up-hill work to return from the legs. If all these things are taken into consideration, the prevalence of grease needs not to be wondered at.

It assumes different forms in its different stages; but at first it is simple irritation of the skin and glandular structure of the heel. The heel becomes red, itchy, dry, and scurfy. The natural suppling secretion, from the glands of a part, is partly suppressed; while that of the cuticle is increased.

If warning is taken in time, the complaint is easily arrested. No effort must be made forcibly to separate the scurf from the skin beneath. There must be no excoriation, or soreness, if it can be avoided. A good thick lather of soft soap and water should be rubbed gently into the heel; and a considerable part of the scurf will be readily removed.

The following ointment should then be rubbed on the heel morning and night.

RECIPE (No. 58).

Ointment for Scurfy Heels.

TAKE—Acetate of lead, two drachms;
Lard, an ounce.
Rub these well together, until they are thoroughly incorporated.

This will supple and detach the remaining part of the scurf; and at the same time sooth the irritability of the skin. A mash should be given every night; a diuretic ball twice in the week; green meat should be allowed; and every exciting cause of grease removed.

Possibly the irritation may have proceeded somewhat farther; the scurf may have been suffered to accumulate: it becomes hard and brittle; it cracks; these fissures soon extend across the heel; while a thin discharge moistens the surface.

Here no certain plan can be laid down; but the practitioner must be guided by the depth of the cracks and the general appearance of the heel. The first thing, however, to be done is to get rid of the scurf by means of the ointment for scurfy heels (Recipe, No. 58, in the preceding page). If the cracks are superficial, an attempt should be made to dry them up; and a lotion will be most conveniently employed for this purpose. Fortunately, we have at our command an agent which will act beneficially in two ways. The chloride of zinc will not only destroy the stench which accompanies the exudation, but it will also heal the cracks from which the moisture proceeds.

If the crack is not evidently closing in the course of a very few days, the weak solution, consisting of a scruple to a pint of water, must be exchanged for the stronger wash; composed of a drachm of the chloride of zinc to the quart of water.

It will occasionally happen, that either there was at first so much irritation; or it has been so aggravated by injudicious applications, that it will be necessary to allay it before the cracks will heal. For this purpose, a poultice into which charcoal largely enters, will be found to answer admirably. Should, however, a stronger poultice be demanded by the offensive state of the part; it is easily formed by boiling some carrots, or turnips and mashing them. Then adding a quarter their

weight of pounded charcoal; and putting upon all a little of the stronger solution of chloride of zinc.

The inflammation having been somewhat subdued, and the cracks beginning to look healthy; the practitioner should return to the lotions. These should be applied morning and night.

If much swelling should remain around the pastern and fetlock; or extend up the leg, a bandage moistened with the lotion, and not too tightly applied, will be serviceable. The lotion should also be twice daily rubbed into the swelled part; particularly if any scurfiness, or cracks are beginning once more to appear.

There must be neglect if grease proceeds farther than this; and yet there are too many cases in which the heels assume a dreadful appearance. The cracks disappear; or rather, while they seem to fill up, the disease extends; while one continuous oozing and soreness spreads over the pasterns and fetlock. Fungoid granulations spring from different points; they increase; they unite; and there is an irregular protruding surface, sore, and bleeding at the slightest touch. Some parts hardening, they are covered with scabs; or sometimes with a spurious kind of horn. The irregular surface by degrees assumes the form of knobs, running in lines, which often bear no indistinct resemblance to a bunch of grapes: hence they are technically called *grapes*. A strangely mingled discharge runs from the greater part of the surface; and stinks most abominably.

Such a condition the disease could not have reached had our previous directions been attended to. The chloride of zinc effectually cleanses, heals and prevents

spurious granulations. There must, therefore, have been sad neglect, where the grapes are witnessed.

Severe measures alone will be of avail here; it is generally the best practice to proceed to the cautery at once. The scabs and the spurious horn should be removed with a knife; and then a flat heated iron run rapidly over the bleeding surface.

The eschars produced by the cautery beginning to come off; the part should be thrice daily washed with the stronger solution of chloride of zinc; and even cloths moistened with the liquid may be kept round the legs. The food at the same time should be nutritive, by no means bulky; and above all things easy of digestion. The horse ought to take all the exercise he is capable of sustaining; for nothing promotes healthy circulation like gentle motion.

A horse, however, that has once had an attack of grease like this will be very subject to a relapse; great care should, therefore, be taken not to expose him to any of the predisposing causes. No water should be suffered to go near his heels: he should be well but not over fed; a mash should be occasionally given; also carrots, and tonic medicine. If it be practicable, a few weeks' run in a salt marsh, with a liberal allowance of oats, should be allowed.

CHAPTER XXX.

THE STRUCTURE AND DISEASES OF THE FOOT.

The diseases of the foot are those of most common occurrence; and the treatment of them is often most

tedious and difficult. They cannot be explained without a slight sketch of the structure of the foot.

The foot of the horse is composed of a horny box, and its contents. The horny box is called the hoof; the portion of it which is visible, when the foot is on the ground, is the crust; beneath are the sole, the bars, and the frog.

The crust has its lower edge resting on the ground; and as it ascends it takes a direction obliquely backward. The degree of obliquity is very different in different horses; much of the usefulness of the animal depends on its taking a proper direction. A comparison of different feet has taught the horseman that the degree of obliquity most consistent with soundness and usefulness is about 45 degrees. If it is greater than this, so that the crust forms an acute angle with the sole, it is an indication of weakness in the foot. A too oblique direction of the hoof is accompanied by flatness of the sole, and possibly by pumice foot.

On the other hand, if the crust is not so oblique as it ought to be, but is becoming to a greater or less degree upright; disease of another kind is indicated. The heels are growing narrow; and there possibly may be navicular disease.

When the crust is removed there are seen numerous little projecting vascular lamellæ, or plates, running parallel with each other from the coronet to the sole, over the whole of the pedal surface. Corresponding with these are similar horny projections, or plates, springing from the interior substance of the crust.

The crust diminishes in height and thickness as it proceeds backward; where it gains the sides it is distinguished by the name of the quarters; being called

the toe in front; and the heels behind. Great attention should be paid to the quarters, in all examinations of the foot. If the crust decreases too much and too rapidly in height, a weak foot is indicated—an inability to bear much rattling on the stones, and a greater liability of being pricked in shoeing. Such a horse is said to have *low* heels. If the decrease in height is little and slow, the horse is said to have high heels; and generally has contraction, thrush, or navicular disease.

The crust, being still continued backward from where it forms the heels, turns round and takes a direction again forward upon the sole, along the outside of the frog; under the name of *the bars*. This continuation and projection of the crust, known by the name of *the bars*, is erroneously considered an important part of the foot. It used to be regarded as one of Nature's protections against contraction; and the farrier who did not know anything about these suppositions, in order to give an appearance of openness to the foot, frequently cut the bars away altogether. This practice was by the Veterinary Surgeons of the old school denounced as the height of barbarism. Its cruelty and the consequences which were sure to follow were alike pathetically dwelt upon. However, it occurred to some modern practitioners to try the evil their fathers had declaimed against: and those who made the trial have been so much pleased with the result that they now pare out the foot without paying the slightest attention to the bars.

The heels turning inward, would leave a considerable chasm, were it not for a wedge-shaped horny substance called *the frog*. Its office is to afford protection to a

tendon above; on which the navicular bone rests—also by its shape, and its point projecting forward, to give a degree of security to the tread of the horse; and by its elasticity to give spring to the movements of the animal.

The sole covers the larger part of the base of the foot.

Within the foot is *the coffin-bone*, or principal bone of the foot. It is fitted into the fore-part of the hoof; and occupies rather more than half of it. A small portion of the lower pastern-bone is also found within the horny box; which, uniting with the *bone of the foot*, helps to constitute *the coffin-joint*. Interposed between the coffin-bone and the crust is a substance, adhering firmly to the coffin-bone as well as to the cartilages, and terminating in numerous little plates. These plates before alluded to secrete and consequently firmly adhere to the horny plates of the crust. The weight of the horse is chiefly thrown upon these plates; and they are of service in preventing that concussion which if unopposed would speedily destroy the whole mechanism of the foot. The union of the horny and membraneous plates gives strength; while the yielding of both substances affords elasticity to the motion.

The construction of the back of the foot is more complicated. The pasterns take an oblique direction forward. This obliquity is designed also to obviate concussion; it varies the different directions of the force. In the blood-horse the tuft of hair at the fetlock will often be in contact with the ground; giving easiness of motion to the whole machine. The long pasterns of the race-horse suit the springiness of his action and the length of his stride; the medium obliquity

of the pasterns of the hunter is adapted to the occasional speed and the untiring endurance which are required from him in the field; and the comparatively upright position of the pasterns in the road-horse fits him for his daily task. There is sufficient obliquity to insure some pleasantness of action, but not enough to endanger the continuance of the pace.

The two principal of the flexor tendons, the tendons by which the leg is principally bent, run along the back of the pastern-bones. One of them is continued low down, and is inserted into the sole of the coffin-bone. There must be a great deal of motion and play in this tendon, with an equal exposure to injury; and the back of the foot presents contrivance to prevent the mischief that would otherwise certainly ensue. First, there is *the navicular-bone*, situated behind the coffin-bone; with the lower pastern-bone completing the coffin-joint. It is united to both; the tendon and the bone are joined by ligaments: and below the navicular bone, presents a free polished surface over which the tendon plays. The navicular-bone partially yields with every motion of the tendon; thus preventing a great deal of that concussion which must otherwise have taken place had the tendon sharply turned over a fixed bone, in order to be inserted into the coffin-bone.

The navicular-bone, when the pastern presses upon it, descends; the tendon descends with it; and there is much weight pressing upon both. Then there is interposed between the bottom of the foot another highly elastic substance, which is destined to receive this pressure; and, yielding as it receives it, obviates dangerous concussion:—the *internal* or *elastic frog*—

the cushion on which the tendon and the navicular-bone rest.

This is the important function of the internal frog; but there is another quite as valuable. The horny covering, which envelopes the foot of the horse, from its very nature may occasionally subject the foot to considerable pain and inconvenience. It contracts when exposed to dryness or heat. The feet of our stabled horses are too liable to injury from this source; and there is the fetter of the shoe, which still more disposes the horn to contraction.

The elastic frog yields to the pressure of the descending tendon and navicular-bone; how does it yield—can it be squeezed into a smaller compass? No. It however shifts its situation. It presses upon the sole; and the sole being naturally concave, flattens; and thus expands the lower part of the foot. When the weight is taken off in raising the foot, the sole ascends with a kind of rebound; and the frog ascends too, with the same kind of springy action, and forces itself against the lower part of the tendon. Thus the lower part of the heels are expanded by the descent of the sole; and the upper part by the elevation of the frog.

To assist in this, there is another elastic mechanism, placed on the upper part of the side of the foot; *the lateral cartilages.* These receive the pressure of the frog; they receive it without concussion or shock; and they increase the expansive effect. A horse soon becomes lame when, from the too violent pressure of frog upon the cartilages, as in the straining of heavy draught, these cartilages become inflamed, and turned into bone.

BRITTLE HOOF.

This is a very serious inconvenience with some horses, especially in hot and dry weather. The hoofs chip away at every shoeing; until at last there is scarcely nail-hold, and the farrier is compelled to take a great deal more care, than smiths in general will take, to avoid pricking the horse.

This brittleness of the hoof is a natural defect in some horses; but in others it is brought on by the utter neglect of stopping the feet. In such cases every care is necessary; and often all that can be done is of little use. A blister round the coronet, will often do good; but we can only expect it to be sanctioned when the evil is of a nature to incapacitate the horse for work. In the majority of instances the horse will be required to work on; and then the best efforts must be used to limit the mischief as much as possible. For this purpose both stopping and dressing must be applied to the hoof. Water in cases of this kind does harm. It moistens the horn for a time; but, afterwards it dries, and the hoof becomes more brittle than it was before. Equal parts of tar, grease, and soft soap, well mixed together, will make a good stopping; which may be spread on tow, and retained against the sole by splints.

Cow-dung stopping, with a small portion of clay in it, to give it consistence, will be found useful as an occasional application to sound and healthy feet; but its continuous employment does injury. Linseed meal made into a paste with water, is more cleanly and less drying; but if the linseed be moistened with the

following liniment, instead of water, its effects will be increased, and the horn will be benefited.

RECIPE (No. 59).

Suppling Liniment for the Feet.

TAKE—Oil or spirit of tar, a pint;
Common oil of any kind, a quart.
Mix them together.

After the feet are cleaned out when the horse comes from his work, let the paste, made as directed above, be plastered over the sole; and the next morning removed before the horse it taken out of the stable. The quantity required will not be large; and the same portion will, with very little care, answer several times. At the same time that the feet are stopped, the hoof may be dressed; which is soon done, by simply dipping a brush into the liniment, and well rubbing it over the whole of the crust. This will tend much to preserve the natural pliancy of the horn; and at the same time will very considerably increase its growth.

SAND-CRACK.

Connected with brittleness of the hoof, and usually produced by it, is a fissure or longitudinal crack in the crust. It may be produced in a moment—one false step may cause it; but the predisposing cause is brittleness of the hoof. Sand-crack usually takes place, either at the weakest part of the foot, or where there is most stress and pressure; therefore it is oftenest seen upon the inner quarter of the fore foot; because there the greater part of the weight of the nag-horse is thrown:

in the hind foot the sand-crack is most frequently at the toe; for there is the principal stress in the act of drawing heavy loads. Occasionally it begins at once from the coronet; but more generally it is first perceived about the middle of the hoof.

The slightest appearance of sand-crack should be attended to. It uniformly begins from without, and penetrates inwardly: it may therefore sometimes be arrested in its progress while it is merely superficial. Whenever there is a sand-crack, no matter how long or short, how shallow or deep it may be, it must be cut out. The drawing knife must be used till the very bottom of the crack has been gained; the side of it having been removed, so as to make what once was a fissure a broad groove; and, if the crack does not reach from the top to the bottom of the crust, a line should be deeply drawn with a sharp firing-iron, above and below it; in order to prevent the crack from spreading either way.

If lameness accompanies sand-crack, the fissure has penetrated through the horn to the sensible parts; either gravel has insinuated itself, which is giving pain; or a portion of the sensible part beneath has protruded into the crack, and is there pressed and confined. The crack must now be searched to the bottom. The sides must be pared down; and then, the fissure being freely open, a poultice must be applied, to soothe the irritation and bring away any sand which may have got into the crack. When the dirt or gravel has been removed, and the imprisoned laminæ been liberated; a small piece of tow, dipped in the weaker solution of chloride of zinc, must be introduced into the crack and bound firmly

upon it; while a bar shoe, with no bearing upon the seat of injury, but a clip on either side of the crack, is placed upon the foot.

Unless the crack is very slight, the horse should be rested for several weeks; if the fissure extend from the top to the bottom of the crust, a stimulating liniment or mild blister should be applied to the coronet, to quicken the downward growth of horn. As soon as there is sufficient new horn above the crack, one or two transverse lines should be drawn with the firing-iron upon it; so as to cut off the communication with the sound horn: a little melted tar and pitch covered with tow may then be applied to it, and a strap buckled tightly round the hoofs. A bar-shoe of the description before mentioned should be put on; and then if the horse is much wanted he may go to work; but six or eight months' additional rest will be required to insure the sound growth of the new hoof.

In bad cracks, there may, before the treatment has commenced, be a protrusion of fungous substance. This causes acute pain and excessive lameness. As much as possible of the sprouting flesh should be cut off; the horn around pared thin, and a pledget of tow, on which some powdered blue vitriol has been sprinkled, bound as tight as possible upon the part. There will be some bleeding, but that should rather be encouraged than checked. The pressure with the caustic will remove any remaining portion of the substance; and also prevent its re-appearance.

The sand-crack being removed, care should be taken to prevent a return of it. A foot naturally brittle will continue brittle: hence the necessity of careful stopping

at night, and the occasional use of the supplying liniment for the feet.

TREAD, OR OVERREACH.

This is a wound on the coronet or heel, caused in the fore foot by the hind one *overreaching* and wounding it; in the hind foot it is produced by the heel of the fore shoe hitting the coronet. The part should be punctured in two or three places; warm fomentations should be applied; or linseed-meal poultices. The contusion will often be so serious, that some degree of sloughing will ensue: the poultices should, in such cases, be continued until *the core* comes out; when the solution of chloride of zinc will speedily heal the wound.

If the coronet be cut through, it is often a very serious affair, and may lead to quittor, or false quarter. The first thing to be done here also is to poultice, in order to subdue the inflammation; and, this being accomplished, it must be healed as soon as possible by means of the solution just named. So serious an injury, however, will not yield to such simple treatment, if the case has been neglected for even a few days. A sore having pipes or sinuses may probably be established; and there will be a quittor, of which we shall presently speak.

FALSE QUARTER.

Either from neglect of sand-crack, or the too brutal use of the firing-iron, there often happens a slough of the coronet; whereby a portion of the surface which secretes the outer table of the hoof is lost, and the horn

at this place is deficient; there being a groove upon the outer surface of the wall from the top to the bottom of it. This is termed *false quarter*. It is a very serious defect in the foot of the horse, and is never to be remedied. The strength of that quarter is materially lessened; and this circumstance may lead to much annoyance.

In such a case it is hopeless to attempt a cure. The part which has been destroyed can never be restored. All that can be done is, to have the shoe well eased off, and a clip placed on either side of the groove; while the hoof should be constantly dressed with the liniment recommended for brittle hoofs. These measures will, in some degree, rectify the evil, and the horse may perform ordinary work.

CONTRACTION.

The foot of the horse, in its perfect state, approaches to a circular form; but he has scarcely entered our service before it generally begins to assume a more lengthened shape; becoming narrower everywhere, but especially at the heel. Some horses, however, have naturally narrow feet; and in them it is, therefore, hardly a defect. The contracted foot is one which has departed from its original shape—one which was broad and has become narrow; and, as this change seldom occurs in a like degree in all the feet, the best evidence of its having taken place is found in the fact of the feet being of different sizes or shapes.

Contraction, however, is rather the symptom of disease than a disease of itself. The horn is secreted by the internal parts; and these internal parts must,

therefore, be affected before the horn, which is their secretion, can be changed. When, therefore, the form of the hoof has altered, we have evidence that the deep-seated structures are not healthy; but their condition may be aggravated by the state of the horn; in the same way that every disease may be rendered worse by the symptoms which it has produced; and which in their turn have become the causes of further evil.

To make this more plain I will narrate the history of a horse's foot. The animal is taken into the stable, where it stands for many hours; during which in a state of nature it would be walking about in search of food, or playing with its companions. The foot is thrown out of use, and of course it dwindles; which, to render the consequences of inactivity more certain, the nails of the shoe render the crust unyielding, and cause the hoof to press upon the sensitive parts. Then the horse is suddenly saddled, and put to his pace with a load upon his back. The feet have to move rapidly over hard roads, and have to do this in tight shoes. Lameness often is the consequence; but the effect does not always mount to that height. Irritation, however, may be induced. The sensitive and secreting parts of the foot become irritable; and they pour forth more of that substance which it is their function to produce. The horny box is therefore thicker than it would be if the feet were healthy; and the additional thickness of the hoof renders it less yielding. In its turn the horn presses upon the parts within, and aggravates their irritability. Pressure is one of the most certain causes of loss of substance; and the foot, constantly confined

and squeezed, becomes necessarily smaller; thus, though contraction cannot take place without more or less disease of the internal parts; contraction also, being once established, causes the foot to become yet smaller, or further diseased.

The foot of the domesticated horse requires constant attention; and we must here quote some excellent remarks contained in the work entitled "The Horse." "There is no rule which admits of so little exception as that which declares once in about every three weeks the growth of horn, which the natural wear of the foot cannot get rid of, should be pared off; the toe should be shortened, the sole should be thinned, and the heels lowered."

The heat of the stable, and the fettering of the shoe, will increase the disposition to contraction; but the main cause of it is disease of the internal part of the foot, however produced.

It is easy to conceive that when the foot is rested in the stable; and the horse favours it by going lame; that the want of the natural pressure must speedily occasion still further contraction. The disease with which it is mostly connected is the navicular-joint disease; which remains to be considered.

The treatment will consist in removing the causes of contraction. Should this be ascertained to be produced by general irritability; inducing a fumbling gait, rather than a downright lameness; something may be done, providing the owner is willing to make the trial. The sole must be pared all round, until the blood starts as from many little pin-holes. The strength of horn must be weakened where the pressure is greatest.

Carefully avoiding to wound the coronary ring, the quarters must be well rasped. The overloaded vessels of the foot should be relieved; and three or four quarts of blood should be taken from each toe; after this, the feet should be enveloped in poultices, changed every day, until any unnatural heat of the foot has disappeared.

When evident, but too often temporary, relief is thus afforded; tips should be tacked on; while the horse should be allowed a run upon a salt marsh; and there he should remain until the quarters are grown down; being taken up once in three weeks to have his sole pared out and his feet generally attended to.

If the case is not sufficiently severe to require or to warrant the loss of the services, swabs should be worn while the animal is standing in the stable; and the feet should be well stopped at night. The suppling liniment for the feet (Recipe, No. 59, p. 251) should be daily used, and an unfettered shoe (a shoe nailed on the outside and with only one nail beyond the toe on the inside) should be applied. This shoe will be sufficiently secure under any work that can be required from such a horse; and it leaves the inside quarters at liberty to expand.

The shoe with a joint at the toe is worse than useless; for the stress on every nail-hole soon breaks away the lower part of the crust from a foot rendered by the disease a great deal too brittle. The shoe with a clip at each heel, to prevent its wiring in, is also pernicious; for the process of contraction will still go on, and the clip will eat into the foot, and be a source of the most frightful corns. More injurious still were those screws

by which it was attempted mechanically to force the heels asunder. Nature rebelled against this violence; inflammation was excited tenfold greater than that the screws were intended to remove; and the work of contraction was hastened: or, if the heel yielded for a while to the force which was used; it was necessarily at the expense of some lesion within, which announced itself by lameness.

INFAMMATION OF THE LAMINÆ, OR FEVER IN THE FEET.

Proceeding to the diseases of the parts immediately within the hoof, "Inflammation of the Laminæ" first presents itself; whether its frequency, its obstinacy, or its sad consequences are considered.

When it is recollected what the laminæ, which connect the hoof to the coffin-bone, have chiefly to sustain, the violent concussion to which the feet are exposed when in rapid action; it will not appear surprising that intense inflammation of these parts sometimes ensues. Besides this, there is no structure in the body of the horse so exposed to other causes of inflammation as the foot. After the animal has been ridden far and fast, while he is reeking hot, he is occasionally plunged up to his belly in the nearest pond or river. Almost every groom immediately washes the feet of his horse; while very few of them will take the pains carefully to dry the dripping members. What is so likely to follow as inflammation? A horse may have been travelling many a mile up to his coronets in snow; and when he arrives at his journey's end, instead of

having the warmth gradually restored to his feet by half an hour's good hand-rubbing, he is put up to his knees in straw; or his legs are immersed in warm water. Is it not reasonable to expect that fever in the feet will follow this sudden change of temperature? In other cases, there may be a metastasis or change of the place of inflammation: the animal is recovering from inflammation of the lungs, and suddenly the feet are attacked; and that without any fault of the surgeon or of the groom.

Inflammation of the laminæ can scarcely be mistaken. The horse is continually shifting his posture; yet without the violent action. The feet are constantly moving; but they are moved as gently as possible. When the hand is passed down to them, the heat of the feet is evident enough. Generally, however, the horse, tired of shifting his place, and yet retaining the pain, lies down; and can with difficulty be induced to rise again. All the characteristics of general inflammation are exhibited. The pulse is hard and fast—the breathing sharp and quick—the skin harsh—the mouth hot; and the ears cold: but there are also signs which indicate the seat of the disease; for, besides the hoofs being unnaturally hot, the arteries of the legs throb; while the horse often points to his feet as the seat of pain, by looking at them, and resting his muzzle upon them.

The treatment of inflammation of the feet must be prompt.

Other inflammations may possibly, to a certain degree, brook delay; but here not a moment is to be lost. The inflammation *must, if possible, be made to*

terminate in resolution; for, if the next process, and in some inflammations a salutary one, commences—if pus is thrown out within the foot—the hoof will inevitably come off.

Without a moment's delay the horse must be bled; and there is dispute concerning the best place to abstract blood from. Some recommend taking blood from the toe; but it is not always safe to wound a part during the existence of acute inflammation within it. The jugular should be opened; and the stream allowed to flow till the pulse falters. If in five or six hours the pulse regains its inflammatory character, the coronet may be punctured in several places. A third bleeding, but of a local character, may be justifiable; yet it should be remembered that such excessive depletion retards the recovery, although it may check the primary disease.

A full dose of physic should be administered; and injections should be thrown up to quicken its action. Sedatives and febrifuges combined should also be freely given; not only to allay the general fever, but also to subdue the vascular excitement as well as to deaden the pain. The following ball should be repeated every second hour until the pulse intermits, or the gums become tender:—

RECIPE (No. 60).

Take—Digitalis, a drachm;
Opium, two drachms;
Calomel, half a drachm;
Colchicum in powder, a drachm;
Nitre, three drachms;
Emetic tartar, half a drachm;
Make in a ball with treacle.

We would desire to do something to the feet, but often the horse obstinately stands and will not suffer them to be raised or touched. If the shoes *can* be removed, they ought to be taken off; and the soles, should it be possible, be pared. The feet then should be put into poultices; or constantly fomented. If, however, the horse resists, these things had better not be attempted. Wet cloths can be placed upon the legs; and these can be kept constantly moist with the coldest water. The straw should be removed; and its place supplied with damp tan; or even sawdust, which may be moistened, and will be less heating to the animal's feet. The body should be clothed—a sheep's skin placed upon the loins; even if the horse will eat, only a few spare bran-mashes should be allowed; but water ought to be constantly before him.

When the first symptoms abate, the coronets and legs may be blistered; but this ought not to be done until the acute stage has passed. A seton, however, may, at the commencement, be placed in the chest; and often, when thrust through the diseased frog, seems to be attended with benefit.

The practitioner will carefully look out for the worst symptoms, as well as those of amendment. When separation begins to take place at the coronet, between the hoof and the hair; it indicates that the process of suppuration is established by exudation; and, that process once thoroughly set up, it will go on, in defiance of all that can be done to stay it. It will be useless further to punish the horse; but some relief may be obtained by surrounding the feet with poultices. Another hoof will in process of time be produced; but

it will be smaller and weaker than the first, and liable to inflammation.

It is seldom that intense inflammation of any kind terminates without effecting some change of structure. Disunion to a very considerable extent between the horny and fleshy laminæ is a frequent consequence; and the result of that is, that the coffin-bone is no longer retained in its place; but sinks backwards and downwards. A malformation which no surgery can remove is the result. The sharp edge of the coffin-bone rests upon the sole, and often pierces through it. This is an incurable state of the foot. The attempt at forcing up again the coffin-bone betrays ignorance of anatomy, and of the progress of disease. When the coffin-bone begins to recede from the crust, the hoof follows it to a certain degree; but its structure limits this, and another process commences in order to fill up the vacuum; an unnatural quantity of plastic matter is secreted by the sensitive laminæ; the crust thickens, and inclines inward as the coffin-bone retires: it has sometimes been observed more than two inches in thickness. Nature is, as it were, attempting still to maintain the union between the parts.

What power applied to the sole can force back the coffin-bone, pressed upon and kept down by this thickness of horn? or what power can be applied to the external sole without bruising the internal and sensitive one? Lameness, which no art can relieve, ensues; it is lasting and incurable. The horse should be destroyed; but many animals in this state are forced to do slow work; and, by the whip, compelled to move in agony.

Lameness often appears in a chronic form, but is

always distinguished, no matter in what state it may exist, by the peculiar manner of going which it induces. The horse with inflamed laminæ endeavours to cast all his weight upon the heels; in order to spare, as much as possible, the wall with which the diseased part is connected. The gait is peculiar, and the toes pointing upwards denote the condition of the animal.

Chronic laminitis may be the consequence of the acute disorder; more frequently it comes on gradually; and is at all times difficult to remove. Setons through the frogs, with repeated purgatives, and a course of alterative medicine, have answered best; although too often this form of the disease resists every treatment.

Laminitis may appear in one or all of the legs. Most frequently the two fore feet are attacked; and the animal then brings his hind legs under him, as much as possible, with the intention of taking the weight from the affected members. When only one foot is attacked; the other is always ultimately the seat of poignant lameness; and what once was the healthy limb, becomes the most diseased; because the animal, to spare the lame leg, continually casts his whole weight upon the sound one. The horse with laminitis in one leg should be destroyed immediately. With all four limbs attacked, he may recover; but, when laminitis appears in one only, he has no chance of being relieved and it is mercy to shorten his sufferings.

PUMICED FEET.

The sole is naturally concave or arched; but too often, under our improper management, it becomes flat; not unfrequently, it becomes at last globular

swelling out and presenting a convex surface towards the earth. Heavy horses, bred on marshy land, generally have weak flat feet; and when put to work upon the road, the battering which the hoof is obliged to endure naturally affects the sole. The irritation causes the coffin-bone to enlarge and bulge outward; while the secretion of horn, being originally weak, affords the sensitive sole but little protection. The wall becomes brittle, and also thin; the sole is likewise thin, but generally soft; the frog alone is healthy, and that is large, being amply covered by elastic horn.

No art can restore the foot to its natural state; but the horse thus affected may, with care, be rendered serviceable. A blister to the coronet may cause a stronger development of the crust; and thus procure for the smith a better hold for the nails of the shoe. The sole must never be pared out; but a heated iron occasionally passed over it will stimulate the internal parts to pour forth a stronger horn, and also harden that which is secreted. Some persons, when the shoe is removed, let the horse always for some hours stand upon a level pavement; but there is little benefit gained by this practice. The shoe is of all importance. It should not be a bar shoe; but what is termed a dish shoe—that is, one hollowed out, so as to suit the unnatural figure of the foot. The web must be broad, in order to protect the sole; and the bearing must be entirely upon the crust and frog. The shoe must likewise be strong enough to protect the foot; though, at the same time, it ought to be as light as is compatible with the degree of strength equired to do this effectually. The nails must be placed wherever a hold can be obtained; and there must

be no complaint made if the smith should gain some purchase even by fettering the heels. In cases of this kind, the farrier has seldom much choice; but he is obliged to obtain his hold at any part into which a nail can be driven with safety.

WOUNDS IN THE FEET.

These are generally caused either by pricking in shoeing; or the picking up sharp substances upon the road. If discovered in time, they are very easily managed; but if the process of suppuration has commenced before the injury is attended to, the cure will be tedious, and not always certain.

When a horse is pricked or stubbed, the farrier pares away the horn to the very bottom; and then sometimes places a bit of tow, wetted with spirits of turpentine, on the part, and sets it on fire; and, if he has fairly laid open the wound, the case may do well without the fire; for should the flame burn the internal parts, the intended specific will assuredly produce all those consequences which it was meant to prevent.

It is indispensable that the wound should be freely opened, by cutting away the horn, *to the very bottom;* and then, if a bit of tow, dipped in tar, be put on the wound, and a little more tow on that, and the whole is confined by a firm pressure, the puncture will generally heal; or should it have been of depth, the foot may be first placed into a poultice.

When the dressing is removed on the following day, the wound should be carefully examined all round with the finger-nail; in order to discover whether there is any separation between the horny and sensitive sole, which either had escaped the first examination, or has since

taken place. If it exists in the slightest degree, the separated part must be carefully and thoroughly removed;—and this caution must be observed at every subsequent dressing. If there is one thing of greater importance than another, in the treatment of wounds of the feet; it is to remove every portion of horn that has ceased to adhere to the fleshy part beneath. Union can never be re-effected; but the horn thus detached will remain as a foreign irritating body.

If it has been necessary to open round the original wound; the exposed surface should be very lightly touched with the chloride (butyr) of antimony, applied to it by means of a feather. A pledget of soft tow, shaped to the wound, and saturated with tar, should then be put upon it, a larger piece over that, and the whole confined as before with a firm and uniform pressure. There are few wounds over which fresh horn will not readily grow by means of this treatment.

QUITTOR.

Any injury which can cause the internal parts of the foot to suppurate may produce a quittor. Corn, overreach, tread, bruise of the sole, stabs of the feet; in short, as was before mentioned, any injury which could originate inflammation of sufficient energy to start up suppuration, will end in quittor. Pus is secreted; but it cannot escape through the horny wall, or very rapidly find its way through the fibrous substance of the coronet. The matter, thus confined, goes on increasing; and, as it must go somewhere, it causes absorption in various directions; wherever the parts are most yielding, giving rise to numerous pipes or sinuses.

Pus has been thrown out; it has found its way under the crust, and among the sensitive parts. Irreparable mischief is sometimes done by this process. The most favourable state of the case is when matter breaks out at the coronet, soon after the lameness is perceived; but, occasionally, either the farrier has been very careless in his examination of the foot; or no notice has been taken of the lameness until the matter has burrowed in every direction; it has insinuated itself under the cartilages and ligaments, and into the interior of the foot. None but very general rules, therefore, can be laid down for the treatment of quittor; and no one but a skilful practitioner should be employed in such a case.

When suppuration has commenced, there is always great heat of the foot, and excessive lameness. The arteries of the pastern throb violently; while the heels and coronet speedily enlarge. In such a case the shoe should be taken off; then the sole pared out till it is so thin that the blood begins to start. While this is done, the practitioner watches to discover if any portion of the horn is discoloured; and if it be, he cuts boldly down upon it. Should none of the horn be red, he feels the sole well over; and, where it springs most under the thumb; or at the place where pressure produces most pain; he there makes an opening, and, in almost every case, matter is let out. This done, and every particle of the detached horn removed, he places the foot into a poultice, and perhaps a few simple dressings afterwards may end the business.

In such a case, however, he will have anticipated a quittor, not have cured one. There is no quittor until

there are pipes or sinuses established; then there will either be a running sore at the heel; or on the coronet; or those parts will be soft, tender, and considerably swollen. In the latter case he plunges the lancet into the most yielding point of the swelling; and, the matter being evacuated, he then tries the sole; and having evacuated the pus beneath it, he next endeavours with the probe to discover how many sinuses exist, and in what directions they run. If there should be a sore or wound, he does not stab the coronet; but all else he follows in the manner explained.

The great object is to ascertain the direction and extent of the sinuses; so as to form some opinion as to the probability of a cure. If the matter has penetrated deep through the cartilages, a cure is very difficult; if it has found its way into the coffin-joint, a cure is impossible. The probe, therefore, must be carefully used; in order to discover what important parts may be involved.

The matter generally finds its way out at the coronet above one of the quarters; and frequently is released rather backward towards the heel. If the sinuses run backward, the practitioner has a fair chance of success, and may undertake the case; but, if they run forward and inward, he must conduct his examination cautiously, and hesitate before he delivers a decisive opinion. Here a knowledge of the anatomy of the foot will be indispensable.

The case being undertaken, *endeavour to discover some dependent orifice.* A sinus may, perhaps, be traced down to the sole; or in the direction of the sole; or pressure with the pincers will detect some

spot in the sole or low down on the crust, where the horse feels particular pain. The practitioner should pare down upon that; for it is probable that he will find a sinus there. If he is disappointed in this, he must examine the pipes afresh; and ascertain where they run deepest; and where, with least danger, he may pass setons.

Every part of the sole that is detached must be removed. Some recommend the removal of the quarters also, so far as the sinuses extend; but the practitioner will hesitate about this; because some months must pass before the horn will grow down again; though, if properly shod, it may not incapacitate the horse for work; and because, although the horn, once separated, will never again unite with the parts beneath; yet, if a dependent orifice be obtained, the internal wound may heal; and, by degrees, the fresh horn will grow down, repairing any damage the exterior of the foot may have suffered.

An attempt must next be made to excite a healthy action in the parts beneath; which will be most quickly and effectually done by injecting a saturated solution of the sulphate of zinc (white vitriol) in water. Let this be repeated until a copious discharge of thick creamy matter is induced. Then change the injection for one of the weaker solution of the chloride of zinc, dressing the part daily; and judging of the progress of the cure by the nature of the matter discharged.

In slight cases this will be sufficient; but in some it may be necessary to have recourse to more powerful measures. A saturated solution of corrosive sublimate may be substituted for the sulphate of zinc; or pow-

dered corrosive sublimate may be forced into the sinuses. The veterinary surgeon will, however, pause before he resorts to this last method; for the sloughing may be too deep, and the destruction of the surrounding parts too extensive. More horses have been destroyed in consequence of unnecessary severity and wide sloughing, caused by the caustics used; than from the natural progress of the disease.

BRUISE OF THE SOLE.

This is a circumstance of frequent occurrence; and of very little consequence, if timely and properly treated. A horse in rapid action may tread on a sharp projecting stone; or a stone may have insinuated itself between the web of the shoe and the foot; all of these things will cause pressure upon and bruise the sole. The injured part may always be detected by the pain which the horse evinces when it is pressed upon.

The sole, over and around the tender or discoloured spot, should be pared; not only until it yields to the pressure of the thumb, but until the blood begins to start. The appearance of the blood will be a satisfactory proof that the bruise has not run on to suppuration. Should pus be present let it freely out; remove all the detached horn; then apply a pledget of tow, tar, and pressure.

CORNS.

These are bruises of a more serious nature. They are situated in the angle between the bar and the quarter; being generally on the inner side of the fore-foot.

The owner is in fault when he suffers the shoe to

remain upon the foot too long. It should be removed, and the foot pared out once in every three weeks; otherwise the shoe will, in the farrier's language, "grow into the foot," *i. e.*, the shoe preventing the natural growth of the horn, the crust will be prolonged; the shoe being carried forward, and the bearing being thrown upon the unprotected heels. If the shoe should become loose, gravel will frequently insinuate itself between it and the crust. The dirt will accumulate near to the bars and bruise the sole. The habitual use of shoes raised at the heels is a cause of corn; from the disproportionate pressure and concussion thrown on that part of the foot. On the other hand, a foot naturally, or from neglect or disease, contracted, often has corns; because the thick and hard sole does not yield when the coffin-bone descends; but a low, flat and fleshy foot is of all others most likely to exhibit corns; because the sensitive sole is not protected by a concave foot; but being placed low is squeezed between the coffin-bone and the shoe.

Bruises are accompanied by extravasation of blood; so, in consequence of a bruise between the quarter and the bar, blood is thrown out; which insinuates itself into the young horn, and the existence of ordinary corn is indicated by the red appearance of the horn, when the angle of the bars is cleared out.

Corns are too much trifled with in common practice. A horse with a corn cannot be considered as sound; unless the diseased appearance is so very slight as not by any possibility to occasion lameness; for in general he is liable to become lame without a moment's notice.

The cure is to be attempted by paring out the angle at the quarter and the bar almost to the quick. The extent of the mischief will thus be rendered evident; while the horse will be relieved by the pressure being taken from the part. If it is a simple bruise, without suppuration, which will be known by the starting of the blood from a pin-hole or two, a little of the butyr of antimony should be lightly applied, by means of a camel's-hair pencil; and then the shoe should be so contrived that all pressure should be taken from the part. The butyr of antimony will stimulate the almost denuded sole to throw out more healthy horn; and the removal of the pressure of the shoe will be the most likely method to prevent a return of the complaint. If lameness, however, attends the corn, it will be most prudent to poultice the foot before the shoe is applied; as this will remove the inflammation. The daily use of the "suppling liniment for the feet" (Recipe, No. 59, p. 251) will go far to restore the natural elasticity and uniform growth and bearing of the horn. A bar shoe, however, will most effectually relieve the pressure on the seat of corn, and may be worn for a month or two; but it is not adapted for constant use, since, although it takes away weight, which the quarter will not now endure, it throws it upon the frog, which was never designed to receive permanent pressure; and which often becomes considerably injured by this means. After the bar shoe has been left off; the unilateral shoe will be resorted to with much advantage, either for temporary or permanent use.

Corn is in some cases a more complicated affair. The inflammation will run on to suppuration. Matter

is thrown out between the horny and sensible sole; and lays the foundation for quittor. Every separated portion of horn must be removed; the separation must be followed to its full extent; and the means adopted which were recommended for quittor.

The farrier and the owner should make themselves perfectly masters of the kind of foot which the horse with corns may possess; for different horses require essentially different treatment. A horse with high heels, and hard hoof, can scarcely have his foot too thoroughly pared out at each shoeing; while the horse with low weak heels has not a particle of horn to lose; the inner heel, the seat of corn, should more especially not be spared.

CANKER.

Canker is not the separation of the horn from the sensitive part of the foot; but the growth of a fungoid substance instead of healthy horn.

In bad cases of long standing, in which all the feet are involved, it will rarely be prudent to attempt a cure; but in milder cases every portion of diseased horn must be removed; otherwise the confinement of the fungus will not only exceedingly torture the horse, but by the irritation which it produces, will prolong the disposition to throw out the unhealthy substance. This is a rule which admits of no exception; and the owner must never be terrified at the extent to which the foot is laid bare: not the slightest good can be effected while there is any portion of fungus confined.

Having laid the unhealthy part perfectly open: the practitioner will consider what kind of surface it presents.

If there is much fungus, he will probably resort to the knife. The fungus must be destroyed, and it cannot be done too soon, or with too unsparing a hand. A level surface being thus produced, the butyr of antimony may be lightly applied over the whole of it.

There is no disease for the relief of which there are more numerous remedies, all strongly recommended, than for canker. All and each of these will sometimes be successful; but on other occasions every one will fail. Solutions of the various caustics; the different acids, either diluted or of the full strength; powders in which the sulphates or chlorides, are mingled with chalk, bark, or charcoal; and compounds of all kinds of things, have their advocates. Nitric acid and tar is in great favour with some parties. Others employ verdigris, mixed with tar and treacle, or honey, to which is often added a portion of sugar of lead. In fact, the recipes are too numerous to be repeated; but they all have one and the same intention, namely, to act as a caustic and astringent; reducing the fungus, and stimulating the part to take on a healthy secretion. No recipe can or should be given in a case of this kind. The strength of the agent should be suited to the state of the disease, and in this particular no two cases will be alike. Let, therefore, the judgment be exercised; and at the same time let it be remembered that it is better to change the application than to continue its use when it appears to produce no marked or beneficial effect. A rapid succession of different agents employed in different forms will often do that which a pertinacious adherence to a favourite nostrum will too frequently fail to accomplish; but, as in inexperienced hands the buytr of an-

timony is perhaps the safest caustic for general use, that compound will be alone recommended in the present treatise. When not judiciously employed, the more potent remedies for canker not only destroy the surface to which they are applied; but deeply and injuriously eat into the foot. The butyr of antimony acts where we want it; and mixing with the moisture which exudes it becomes weaker, and is speedily neutralized. *Except it is used in outrageous quantities, it cannot deeply corrode the foot.*

This being done, dry soft tow must be spread over the whole of the exposed surface, and made firmly and equally to press upon it; and the horse must be put into a thoroughly dry box; from which the urine will immediately run off, and where no kind of moisture can reach the diseased part. A cankered foot, however, must not be dressed too frequently. The two or three first dressings may be given on succeeding days; but, when the fungus has been in some degree subdued, the bandages should only be removed every fourth day; or even once a week. Every time that the foot is exposed it should be carefully examined; in order to see that there is no portion of unhealthy horn, for if there is it must be immediately removed. The appearance of the exposed surface must also be inspected with great attention. Fresh fungus will require a fresh application of the butyr, or possibly of the knife. Every little pellicle of skinny matter or soft and porous horn must also be pared away: the healthy horn which has been secreted must be lightly run over with the knife; and then the butyr of antimony once more applied to the whole of the surface; the quantity used on the different portions

of it varying with the progress, towards a cure. After this the foot must be bound up as before.

A few days having passed—if the sprouting of the fungus has been quite checked, but yet the horn does not grow so healthily as could be wished, the butyr may be omitted; a pledget of tow should then be dipped in the solution of the chloride of zinc, and spread over that portion of the foot, with more dry tow placed upon that. A sudden change will, by this application, often be effected; but, should not this take place to the desired extent, the use of the butyr must be for a while resumed.

The secret of the treatment of canker consists in the use of superficial caustics or stimulants; pressure as firmly and as equably as it can be made; and the careful avoidance of greasy applications, or of moisture; either applied immediately to the foot, or suffered to penetrate to it through the dressing. The solution of chloride of zinc, is an exception to this last rule; for it corrects the exudation from the foot; stimulates the sensitive parts to the secretion of healthy horn, while the small quantity that need be used will be far from supplying constant moisture.

If wet can certainly be avoided, a horse with a cankered foot will, immediately after the first apparent growth of good horn, do much better at work than standing idle in the stable.

As canker, however, is a constitutional disease, local applications must not be singly depended upon. It is often connected with grease; also with grossness of body. The condition of the horse must be considered; and those measures adopted which are calculated to improve the system.

THRUSH.

Thrush, oftener found in the hind feet than in the fore ones, is recognised by a ragged state of the frog, from the cleft of which there exudes an offensive discharge. It is caused by irritation of the little glands of the frog; which pour forth a stinking and acrid secretion that corrodes the horn of the part. It is not always accompanied by lameness; but there is a treachery about it, against which due precaution should be taken. There is often more mischief done than is at first indicated; and it may run on to inveterate canker.

Thrushes in the hind feet are generally the worst in outward appearance; yet they are most easily cured. In foul stables the urine and moisture gravitates to the back part of the stall, and the hind feet stand in a mass of wet and dung. They become thrushy in consequence: but, with a greater attention to cleanliness and a little treatment, are generally restored.

In the fore feet thrush is commonly only a symptom of internal and deep-seated disease. Then it acts as a drain, and affords relief; if stopped, lameness often immediately follows. In the fore feet, therefore, as a general rule, the foot should be treated and the thrush let alone; but in the hind feet the disease ought to be attacked, and the discharge dried up as quickly as possible.

The frog should be carefully examined, and every ragged and separated portion pared away; then a little of the following paste should be spread on a pledget of tow, and introduced as neatly and as deeply as may be into the cleft of the frog, the ends of the tow being carefully tucked in.

RECIPE (No. 61).

Thrush Paste.

TAKE—Alum;
Blue vitriol; and
White ditto, of each an ounce.

Rub them to fine powder. Melt together two pounds of tar and one of lard, and when they are getting cool stir in the powder.

If the disease has spread so as to render a portion of the frog bare, some of the paste should be spread on a piece of tow of a corresponding size, and placed over the sore, and the whole covered with dry tow. It occasionally may be necessary to touch the sore part with the butyr of antimony. After cases of bad thrush the horse should be shod with leather soles, in order to protect the frog from injury; and the foot should be kept from moisture almost as carefully as in canker.

NAVICULAR-JOINT DISEASE.

This is a very frequent cause of great and incurable lameness; but its nature and treatment was not, until remarked on by Mr. Turner, at all understood.

The manner of the insertion of the flexor tendon into the sole of the coffin-bone; and of the navicular bone lying above the tendon, in order to prevent that concussion which otherwise would take place, have been already explained.

The navicular bone was ordained to be in almost constant motion; to facilitate its movements was given a synovial sac, which is constantly secreting joint oil. This fluid is of all importance; for, if it be deficient, the sides of the sac, not being properly distended, rub

against and chafe one another. Inflammation follows; with it comes lameness. Pain is then great, and the horse rests his foot; thereby aggravating the disorder by not stimulating the synovial sac to secrete the joint oil; and by degrees ulceration of the lower side of the navicular bone is induced. This may go on for a long time; the horse being sometimes so lame that in mercy he is ultimately destroyed. In other instances, however, the animal lives: adhesion takes place between the tendon and the bone: the horse is no longer lame; but he steps short and is incurably groggy.

The cause of navicular disease is anything which may lessen the secretion of the joint oil between the bone and the tendon. Too much rest; too much work; too violent exertion; or concussion to the foot; each and all may be the means of setting up this fearful disorder.

The horse with navicular disease is lame, and the lame foot is hot. The animal, to take the weight from it, stands pointing it in the stable; he holds the lame leg more forward than the sound one; for navicular disease is not known to exist in the hind feet. These symptoms are not, however, constant; but in the early stage of the disease they vary. The heat is sometimes lost; sometimes the foot is of its natural warmth; and sometimes it is deadly cold. Sometimes the horse is very lame; goes out lame; after a little work travels sound; and sometimes his pace is as firm as though he were quite sound. He may continue thus changing about for months; or in a very little time he may become dead lame. His manner of going is peculiar. He travels upon his toe, and refuses to bring his heel

to the ground. He goes up hill with tolerable ease; but down hill he is very apt to stumble. He takes very short and quick steps; and by the pattering noise which he makes indicates the nature of his affection.

With this disease the shape of the foot generally alters; although this is not always the case. A horse with a good open, or even a low foot, may have navicular disease; but commonly the heels wire in; the frog becomes dry and small; the quarters become high; the crust thickens; the sole grows concave and hard. The pasterns also get more upright; in fact, the general appearance of the foot is changed.

If taken in the very earliest stage, the disease may yield to treatment; but in the latter stage, though we may relieve, we cannot then hope to cure. A few doses of physic, and a little fever or alterative medicine, according to the state of the horse, will form the constitutional measures. The foot, however, requires the most attention. The treatment recommended for contraction must be employed. The sole must be thinned; the quarters rasped; blood taken from the toe; the foot placed in poultices; very little and gentle exercise being cautiously given. We would enjoin constant rest; yet we fear to injure the health; but no more motion should be allowed than is absolutely necessary. When the inflammation is slightly reduced, the coronets and legs of both fore members should be blistered, and a seton may be inserted through the frog; the feet being constantly kept moist and cool by means of swabs. After some relief has been obtained, the horse should be turned out to grass for two or three months; subsequent to that he should be put to plough;

care being taken that the draught is not too heavy. The regular and slow work he will thus get will do him much good. He ought to have become sound for three or four months at least before he is again taken to fast work. This is a long business, but only by such tedious means can a cure be obtained; and during all this while the feet must be constantly pared and stopped; the one-sided shoe or tips being worn.

Should all these means fail; or should the disease be established, neurotomy is the only resort. This operation will not cure the disease; but it will render the foot insensible; and enable the horse to be of service to its owner. Even for neurotomy, however, the foot must be selected. Where the hoof is strong, the operation will nearly always be successful; but where it is low and weak; not sufficiently protected; the animal, from the loss of sensation in it, will bruise and injure the senseless foot; inflammation will be excited; suppuration will follow; and the hoof will slough off. In old cases, when the tendon has shared the ulceration; or the bone has become so diseased as to be almost eaten through; then, after neurotomy, the tendon has ruptured; or the bone has fractured; the horse, in either case being necessarily destroyed.

Neurotomy consists in the removal of a portion of the nerves of the leg; and, of course, it can only be performed by a regular practitioner. When, however, the foot has been properly selected; the horse after it has been enabled to hunt for years; in certain instances the lameness has never returned. In some animals, however, sensation has been restored so rapidly, that the lameness reappeared before the treatment was con-

cluded; but these last cases are rare; and in confirmed navicular disease, as neurotomy holds out the only hope of rendering the horse free from torture, it ought always to be tried.

CHAPTER XXXI.

ON SHOEING.

THE principle of shoeing is to afford a secure defence for the foot without interfering more than is necessary with its functions. In ancient times horses went unshod. The roads, where there were any, were probably as rough as they possibly could be; but a defence for the foot, though then much desired, was not invented beyond a leathern case for the hoof. Our horses have for many centuries been shod; and shoeing has become a necessary evil among us. We obtain by means of the shoe a defence for the horse's foot against the hard and flinty roads; over which a great portion of his work must be performed; but, the crust being fettered through the nails; we lose some of the natural elasticity of the hoof; carelessness or ignorance in the manner of affixing the shoe often occasioning an unequal bearing on the different parts of the foot; necessarily producing great mischief.

The first object of shoeing is defence; that is accomplished by almost any kind of shoe, the web of which is sufficiently wide and thick. We prevent mischief to a certain extent, by contriving to have the bearing as nearly as possible where nature designed that it

should be. The whole weight of the horse is supported by the crust when the foot first comes in contact with the ground; and the sole afterwards descends for the purpose of preserving the elasticity of the foot. Then nature and reason demand that the shoe should be constructed so that the bearing shall still be thrown on the crust; and that the sole shall have room and power to descend.

THE CONCAVE-SEATED SHOE.

The concave-seated shoe answers these purposes well. It has a flat circle on the foot-side, running round it; corresponding with the thickness of the crust; and, the lower part of the crust being pared evenly round, the whole weight of the horse is placed on a flat level bearing. A shoe, however, the width of the crust would not afford sufficient defence to the sole; therefore the web is prolonged on the inner part of the circle; for about double the width of the seated part all round. But this must not press upon the sole; for the sole will not bear the slightest pressure without injury. Then the foot-side of the web is bevelled or hollowed out, and presents a concave surface to the sole; so that, even when the sole descends immediately after the foot being brought into contact with the ground, there is no possibility of its touching any part of the shoe.

The concave-seated shoe presents to the ground an accurately flat surface; and to the foot a surface flat towards the outside; where it is to receive the crust and hollow over the sole. Towards the quarters the shoe narrows, and the seating widens; so as to afford

a level bearing, sufficiently broad to receive and protect the quarter.

The common country-shoe is a very different one. It also is flat towards the ground; but it presents to the foot either a flat surface, or a wholly concave one. It is much more easily made than the other; and that is a very considerable object with too many smiths. If the foot surface of the shoe is slanting, the crust must be cut in a slanting direction, in order to correspond with the shoe.

The seated shoe will suit almost every kind of foot; even that which is a little disposed to pumice; whereas, the common shoe, although it may be worn without inconvenience on the concave foot; must be dangerous on the flat one; and almost necessarily productive of evil where the sole is in the least degree convex.

After all, however, more depends on the preparation of the foot than on the kind of shoe. The sole should be well pared out all round; until it will yield a little to the pressure of the hardened thumb of the smith. In a state of nature the sole would be prevented from morbidly thickening by the natural wear of the foot; but we prevent this wear by the defence which we give to the sole; the horn, therefore, is continually accumulating; we must consequently periodically remove it with the knife; or we shall lose altogether that portion of elasticity which shoeing has left to us. A great deal depends here on the skill of the smith; and on the nature of the foot. From some feet very little can be taken away with safety. From other feet too much can scarcely be removed; mischief will inevitably be produced if the horn is suffered to accumulate.

The sole being pared out; an even surface must be given to the crust; but it must not, if it can be avoided, be brought upon a level with the sole; lest that part should be unnecessarily exposed to bruise from the shoe.

The bars may be left or not as it is most pleasing to the fancy of the smith; but the seat of corn should be pared well out. Should the horse be liable to corn, the horn should be removed until the blood begins to start. No lameness will be produced by so apparently severe a cutting; but the animal will go better and more safely if it be effected at each shoeing.

The frog should be relieved of all ragged horn, and left in a somewhat prominent state;—it should, when practicable, be rather more projecting than the heels of the foot; so that it may not touch the ground when the foot is first set down; and yet so slightly removed from the level with the lower surface of the shoe, that it shall certainly touch it when the ground is any way soft or uneven.

The heels will form the last, and one of the most important points of consideration; for, from unequal or undue pressure on them, much mischief often arises. The inner heel is always the weaker of the two; the principal wear will be on it; and near to it, in the majority of instances, corns will be found. The growth of the inner heel must be encouraged as much as possible; a little only must generally be pared from it; and more particularly, care must be taken that it is not left lower than the other.

Then comes the selection of the shoe to suit the different feet. It should, with few exceptions, be the

concave-seated shoe; with a web equally thick from the toe to the heel; but the bearing of the shoe will strangely vary with the kind of foot. It is scarcely possible that a shoe, thinner at the heel than at the toe, can ever be serviceable; on the contrary, it will generally occasion lameness, by throwing undue stress on the flexor tendon. It will be a fruitful source of sprain of the back sinews; also of the navicular disease. On the other hand, a shoe a little elevated at the heel may favour a leg weak in the back sinews. In the hinder foot, and particularly in draught horses, custom has sanctioned the use of a shoe raised at the heel by calkins. This certainly gives the horse a better purchase; enables him to descend a hill more securely; as well as to draw a heavier load. A draught-horse always digs his toe into the ground when he has a heavy weight to move; and he can do this more effectually when the heel is raised. But this practice is carried to an absurd and ruinous length. In many horses of heavy draught, the only bearing points—the only parts of the shoe which touch the ground—are the tip of the toe, and the end of the calkin. There must be inequality of pressure here; and by it the ossification of the cartilages; enlargement of the pasterns; and other diseases with which the draught-horse is often afflicted, are too well accounted for.

Of the varieties of shoes in common use, it is necessary to notice only the following:—

THE BAR SHOE.

This is often indispensable. It is almost the only means by which the pressure can be thrown from the

CHAPTER V.

THE TONGUE.

THERE is the same vesicular inflammation of the tongue in the dog which has been described (page 53) as found in the horse. The dog will not eat; he will not or cannot open his mouth; he resists the attempt to open it with all the strength he has; a great quantity of saliva is running from his mouth; and he has a peculiarly-anxious look. It has been mistaken for lock-jaw, or the commencement of rabies.

The swelling in the horse is usually confined to the tongue. In the ox it sometimes spreads over the whole of the face and neck; and in the dog the cheeks and the whole of the mouth are involved.

On opening the mouth the cause of all this is plainly seen. A red or dark purple bladder extends along the side of the tongue, and more under than in other animals.

The same lancing from end to end, the same washing of the mouth with tincture of myrrh while the wounds are healthy; or with the solution of chloride of lime when they become fœtid; will speedily set all right, especially if one or two doses of physic are given.

This, perhaps, is the proper place to refer to the prevailing opinion of the advantage derived from worming dogs. They are supposed to be broken of their propensity to gnaw everything within their

reach, and to be in a manner secure from becoming mad; or, should they be rabid, it is said that they will never bite.

All this, however, is perfectly fallacious. No dog was ever broken of his trick of gnawing things by the operation of worming. He will have a sadly sore mouth for a few days; but when that gets well he will gradually become as mischievous as ever.

As to worming preventing the dog from biting when rabid; it is hard to conceive how the removal of a little dense tendinous substance enveloped in the folds of the frænum, or bridle of the tongue, and destined to assist the tongue in the act of lapping, can have anything to do with rabies.

The plain fact, however, is, that worming is no preventive either against the disease; or the disposition to bite when under its influence.

CHAPTER VI.

THE TEETH.

THE full-grown dog has twenty teeth in the upper jaw, and twenty-two in the lower one. The central front teeth and the tusks pierce the gums shortly after birth; —the others protrude very rapidly. They remain only a very short period compared with the horse or with cattle; for by the time he is four or five months old the mastiff has all his permanent teeth complete,

but the teething of the spaniel is not over until he is seven or eight months old.

The teeth preserve their freshness and whiteness until the dog is twenty months or two years old; when they begin to be tarnished, and the *fleur-de-lis* shape of the front teeth is changed to a more rounded one. This is hastened or retarded by the general health of the dog, and by the kind of food on which he lives; so that there is nothing about them that will indicate the age with any degree of certainty. The dog of five years old, who has plenty of exercise, and is fed on soft meat, will have a mouth full two years younger than another who has been in constant confinement, or who has been fed on bones; and the difficulty of judging of the precise age increases every year. In the general course of things the middle front teeth of the lower jaw begin to be rounded in large dogs at sixteen months; and in smaller dogs at between twenty or two-and-twenty months; the central lobe of the *fleur-de-lis* is gone, and the whole of the edge is level, at between three and four years old.

The same process commences in the next incisors between two years and a half or three years, and terminates between four and five; and in the corner front teeth it commences at four years, and is completed at five. The wearing away of the upper front teeth begins at a later period, and that has not been so carefully noted.

The tusks do not generally appear to be rounded until the front teeth are more or less changed; and they longer retain their freshness of appearance. The indications of age in them are vague and variable; they

depend still more on the habits and food of the dog than do those of the other teeth.

The diseases of the teeth of petted dogs are often difficult and disgusting to treat. Before the inmate of the drawing-room becomes three years old, tartar begins to accumulate round the roots of many of the teeth. While it grows downward on the teeth, it also presses upward against the gums; it inflames; it corrodes them; and the breath becomes offensive.

If the case is now neglected, the dog soon becomes a perfect nuisance to all about him. The tartar will be collected thickly about the teeth; it will eat deeply into the gums; it will form extensive and fœtid ulcers on the inside of the lips; many of the teeth will become loose, or drop out; and the breath of the animal is rendered absolutely loathsome.

As a local application, healing the gums and sweetening the breath, equal parts of the tincture of myrrh and water will be most excellent. A weak solution of the chlorides of lime or soda will also be found very useful for removing the present fœtor; but they must not be continued longer than is necessary; for they are of a caustic nature, and corrode or destroy the enamel. None of these applications, however, will remove the tartar, or do more than temporary good. To destroy the nuisance, the teeth must be scraped with instruments similar to those employed by the dentist, but of a size suited to that of the dog. When that is effectually done, and all the loose teeth extracted, the mouth will speedily heal; and the breath of the animal no longer be offensive.

CHAPTER VII.

INFLAMMATION OF THE MEMBRANE OF THE NOSE.

THERE are two affections of the membrane of the nose that deserve mention. The first is a peculiar violent spasmodic snorting noise, made with the head extended; the nose protruded and pointing a little upwards. It will occasionally last for two minutes, or more; until the dog seems to be giddy, and staggers or falls; sometimes it terminates in a fit of sneezing: it is rarely connected with any degree of cough. It is coryza—inflammation of the membrane of the nose.

The only medicine that will have the slightest effect upon it is an emetic; and the best emetic for the dog is the following;—

RECIPE (No. 14).

Emetic Powder.

TAKE—Calomel, and
Emetic tartar, one ounce each;
Red sulphurate of mercury, ten grains:
Rub them well together.

The dose will vary from one to three grains of the powder, according to the size of the dog: and the best way to give these emetics is either to open the mouth of the animal and shake them on the tongue; or to mix them in a teaspoonful of milk and force this on the dog.

The mildest emetic (one grain) will usually answer here, and it should be given every third day until the animal is relieved.

The second complaint is a purulent discharge from the nose similar to that which accompanies one stage of distemper. Old dogs are very subject to it; and particularly old pugs. It is occasionally a discharge of simple pus, without much discoloration or smell; but at other times it is of almost all colours, and stinks insufferably. It is probably ulceration of some of the small bones of the nose, and there is no cure for it.

CHAPTER VIII.

INFLAMMATION OF THE GLANDS, AND OF THE CELLULAR SUBSTANCE BENEATH THE THROAT.

PHLEGMONOUS SWELLING OF THE THROAT.

Dogs are very subject to swellings of the neck, of various kinds. Sometimes, on the lower jaw, or on the side of the throat immediately beneath it, a tumour suddenly appears; at first quite circumscribed, but gradually becoming more diffused, running up the cheek, and almost closing the eye, or occupying the throat so as to prevent the opening of the mouth. It is hot and tender; and the dog is evidently suffering acute pain.

After a day or two's fomentation, it will point decidedly at some part, where it should be opened with a lancet. The quantity of fluid which some of these abscesses contain is astonishing. More than a quart has been taken from a large dog.

The fomentation should be continued until the swelling has run itself out; care being taken that the dog is not permitted to get at the part or to scratch it. If a tumour of this kind is suffered to break; or the dog tears it open; or scratches it after it has been opened, a ragged ulcer will be formed, which it will be difficult to heal. The best application for such an ulcer is the common tincture of aloes (Recipe, No. 54, Horse, p. 195).

ENCYSTED TUMOUR OF THE THROAT.

There is sometimes a tumour of a very different kind placed in the front of the throat. It is usually found on, or a little below, the thyroid cartilage, between the skin and the cellular substance beneath. From the beginning it is soft, and plainly contains a fluid. Its progress is uncertain; but generally slow; and it is never attended by inflammation or heat. Fomentations would be thrown away here; and a puncture with the lancet would afford merely temporary relief. A seton must be passed through the tumour, from the top to the bottom of it, and worn until the cyst is obliterated. The contents of this tumour are also various; that which is oftenest seen is a glairy fluid, much resembling the white of an egg; but, after the swelling has been opened two or three times, the fluid becomes mingled with blood, and at length becomes purulent.

ENLARGEMENT OF THE THYROID GLANDS—BRONCHOCELE.

The throat of the dog exhibits yet another kind of tumour. On either side of the windpipe, sometimes

high up in the neck, at others almost as low as the chest, will be felt an oval, moveable, hard tumour; varying in size from a bean to a pullet's egg. The pug, the Italian greyhound, and the Blenheim spaniel, are particularly subject to these tumours. In the pug they are often exceedingly large. The jugulars pass over them, and become strangely turgid; from the necessary impediment to the circulation which such tumours must cause. The tumour sometimes presses upon the windpipe, and the dog breathes with difficulty, or has, in a few instances, been literally suffocated.

A seton passed through these tumours would produce immense irritation; causing them to increase to a strange and fearful degree. Every external stimulating application has done harm; and the practitioner is left to the efficacy of medicine alone: but fortunately he has a medicine that will rarely fail in considerably diminishing the bulk of these tumours, and, in some cases, it will disperse them altogether.

RECIPE (No. 15).

Pills for Enlarged Glands.

TAKE—Iodine, twelve grains;
Powdered gum arabic, two scruples:

Rub them together with simple syrup, and form a hard mass. Divide into forty-eight pills, and give one or two, according to the size of the dog, morning and night.

Being very small, they can easily be concealed in bits of meat or bread and butter; they may, in the generality of cases, be given for a great length of time without any inconvenience; more especially if a dose of castor oil, or Epsom salts, is administered when the bowels

are constipated ; or once in every week or ten days, whatever may be the state of the bowels.

The approach of any inconvenience resulting from the use of the iodine will be indicated by the dog rapidly losing flesh ; but, in such case, nothing more is necessary than to omit the pills for a week, and then give them again as before.

SCHIRROUS TUMOURS OF THE TEATS.

There are other tumours which cannot, perhaps, be anywhere more conveniently considered than here ; viz., *enlargement of the teats ;* or hard *schirrous tumours* in them or near them.

When the milk of a suckling bitch is dried away too rapidly ; or when the teats fill with milk at the time at which she would have pupped had she been with the dog ; or absurd external applications are made to disperse the milk ; more especially if it is a maiden bitch, in whom this secretion often periodically appears nine weeks after she has been at heat ; there will sometimes remain permanent enlargements around the base of the teats ; or very small, hard, kernel-like substances will be found there.

The moment one of these little hard bodies is detected, it should be taken between the finger and thumb, an incision being made through the skin with a scalpel ; it should be turned or dissected out ; for, if it is suffered to remain, it will assuredly grow to a very considerable size, and require a serious operation in order to its removal.

If the owner should object to this summary mode of

proceeding, recourse must be had to the iodine pills; which should be given of the same strength, and with the same intervals, as for enlargement of the glands of the neck.

The iodine, however, has not so rapid nor so certain an effect as in enlargement of the glands of the neck; so it may be advisable to have recourse to another preparation of the same mineral.

RECIPE (No. 16).

Ointment for Schirrous Tumours.

TAKE—Hydriodate of potash, one drachm;
Lard, seven drachms:
Rub them together, and form an ointment.

A quantity varying from the size of a kidney-bean to that of a filbert, in proportion to the bulk of the tumour, should be rubbed into it, and around its base, morning and night.

The combined influence of the pills and the ointment will generally disperse these tumours in their early state: but if they have been permitted to grow, and to acquire considerable bulk, they will often bid defiance to any external application or internal medicine. An operation is then the only resource. The nature of this operation will vary with the size and attachment of the tumour. If it does not weigh above two or three ounces, and is quite detached from the belly, it can be, in a manner drawn from it, so as to leave a kind of pedicle not larger than a finger; or a ligature of double waxed silk may be passed around it, and tightened, and in the course of three or four days the tumour will drop off. If the swelling is of larger size, and is not so perfectly

detached, it will be better and safer to remove it with the knife.

The sooner the owner can be prevailed upon to have one or the other of these operations performed the better for the poor animal; for a radical cure may now be probably effected; but at some uncertain time afterwards the tumour will begin to enlarge more rapidly; it will become red and glistening; hot and tender; then the dog will evidently suffer considerable pain. From a florid red colour, it will afterwards change to a darker hue; and at length assume a purple tinge, and break. A very considerable discharge of thin, ichorous, bloody fluid will follow; and an ulcer of variable depth will be formed.

This ulcer, however, will heal without much difficulty; but it will redden and break again, possibly three or four times in less than double that number of months.

Irreparable mischief was done by the delay. The disease, which at first was strictly local, has become constitutional. The system is affected; and, therefore, not only around the original tumour, but connected with other teats, these kernels will begin to appear. It is now a purely constitutional disease; and local means are altogether unavailing. The removal of any one of the tumours would be useless; for the one next in size would speedily begin to grow, and become fully as large as the other; so the animal might be needlessly tortured with operation upon operation. The iodine also will now be comparatively powerless.

The treatment of these tumours when they are broken, or, at least, for the first four or five times that

they ulcerate, is very simple. If the dog is tolerably tractable, a poultice should be applied, and worn; being changed morning and night, until the fluid has run itself out, and the wound begins to look a little healthy. A few dressings with lint or tow, wetted with friar's balsam or tincture of aloes, will then heal the wound. If the discharge should continue more than three or four days, an astringent may be resorted to; for the long continuance of the poultice would debilitate the part, and indispose it afterwards to heal.

RECIPE (No. 17).

Astringent Lotion for Wounds.

TAKE—Bruised oak-bark, two ounces;
Powdered catechu, an ounce:

Boil them in three pints of water until the fluid is reduced to a pint. Strain the decoction, and put it by for use.

The ulcer should be washed with this several times in the day. It is both astringent and healing; it will arrest the ichorous discharge, and hasten the process of granulation.

CANCEROUS ULCERS.

The time will come when the wound will no longer heal. It will have assumed a new character; it will have become a malignant cancerous ulcer; the source, no doubt, of great pain to the animal; wearing him down with greater or less rapidity, and rendering him a perfect nuisance to every one about him. As soon as the cancerous ulcer is established, the duty of the practitioner will be a straightforward one, namely, to

advise that a termination should be put to that suffering which he cannot relieve.

If, however, it is insisted upon that the case should continue to be treated, fomentations of poppy-heads may be used to assuage the anguish; a weak solution of the chloride of lime to get rid of the stench; and the tincture of iodine, diluted with eleven times the quantity of water, to attack, if possible, the cancerous principle.

CANCER IN THE VAGINA.

Cancer occasionally attacks the vagina of the bitch. It is the consequence of injury and ulceration of the membrane lining that passage; either from being suddenly forced from the dog; or from difficult parturition, and in which the practitioner has been compelled to have recourse to instruments; or the presence of, or awkward or ineffectual attempts to remove, a fungoid substance which sometimes grows on the membrane of the vagina; and which will be described in its proper place. Cancer should not be confounded with these fungoid excrescences; for their cauliflower appearance; their florid colour; the pedicle or stalk from which they spring; and the blood which is continually flowing from them, will sufficiently characterize them: whereas cancer is immediately distinguishable by its livid colour; its uneven surface; its hardened base; and its peculiar pungent and nauseous smell. When the vagina is felt externally, it is uniformly soft if it is occupied by this fungus; but it is peculiarly hard and unyielding when it is cancerous.

Even if it is attacked before there is any external ulceration, there is very little chance of doing good. The iodine pills may be given internally; and the diluted tincture of iodine, as before recommended, injected up the vagina. The tincture of iodine is thus composed:—

RECIPE (No. 18).

Tincture of Iodine.

TAKE—Iodine, a drachm;
Rectified spirit, an ounce:

Shake them several times well together, and the iodine will dissolve. Sufficient only for the use of a week or two should be made at once, because a portion of the iodine will after that time separate from the spirit, and become precipitated.

CANCER IN THE EAR.

Cancer is occasionally the consequence of inveterate canker. It appears first in the internal part of the ear; but it spreads to the cheek and down the face; corroding and destroying everything before it. The progress of this species of cancer can seldom be arrested.

ADIPOSE TUMOURS ABOUT THE TEATS.

It is not every tumour of the teats that becomes schirrous or cancerous. Some of them seem to be composed of mere masses of fat, that have been separated from the neighbouring substance. These are termed *adipose* tumours. They seldom grow to any very large size, and they never ulcerate. They are not often attached to the teats; they are more between them, and they may be known by their uniform smoothness and softness.

ENCYSTED TUMOURS OF THE TEATS.

Other enlargements, belonging more to the teats, are called *encysted* tumours. They are composed of a cyst including a fluid of uncertain character. An enormous tumour may sometimes be of this nature composed of a *single cyst*. These tumours occasionally ulcerate, but the ulcer does not become of a malignant nature. They are always plainly distinguishable from the schirrous tumour by the greater evenness of their surface; and by their not possessing the peculiar unyielding character of the schirrous tumour.

Some have recommended the passing of a seton through tumours of this nature. Good is rarely effected by this; but a degree of irritation has occasionally been produced that has been fatal to the animal.

The *compound encysted tumour* is more common than the simple one. One cyst being formed, another unites itself to it, or seems to grow upon it, and another and another follows, until there is an accumulation of them that makes the whole bulk of an enormous size. This species of tumour never breaks; but, when it hangs down upon or rubs against the ground, it occasionally becomes ulcerated; and the ulceration assumes a malignant character by a repetition of the cause of irritation.

A seton will be of no service here, for it cannot be passed through all the cysts. Both the simple and the compound encysted tumour will be best removed by means of the knife.

WARTS.

Dogs are often subject to *warts*. They appear

scattered on various parts of the skin; either of a simple form, or with spreading, fungus-like heads. If a strong solution of the nitrate of silver is applied to them with a camel's-hair brush, they will often gradually dwindle away without any soreness or pain.

Sometimes they appear on the lips; and frequently bleeding from the motion of the lips or tongue, the whole of the interior surface of the mouth becomes covered with warts. This is a sad nuisance to the dog, for he can eat no solid food; and scarcely lap enough to keep himself alive. The nitrate of silver must be daily applied over the whole of them; and it will be most conveniently used in the solid form over the greater part, if not the whole of the mouth. If a solution is resorted to, some care must be taken that the brush is not too wet, and that as little as possible of the fluid is swallowed.

When warts appear on the inside of the prepuce or vagina, the lunar caustic in its solid form will speedily remove them.

Now and then they appear on the eyelids; and if they grow on, or incline to, the inner edge, they are a source of insufferable annoyance, by entering into or pressing upon the eye. Many a severe inflammation of the eye has been produced by the constant irritation of a wart; and the disease has gone on to absolute blindness because the owner or the practitioner has been too careless to notice a diminutive wart that grew half concealed a little within the lid.

The method of removal will depend on the situation and the size of the wart. If it is small, and lies towards the inside of the lid, it may be cut off with a sharp pair

of scissors; and the root, lightly touched with the caustic, finely pointed. If it lies more on the outside it will be best got rid of by means of a ligature of very fine waxed silk; as the bleeding of the wart will thus be avoided.

CHAPTER IX.

COUGH—ASTHMA.

The dog is as subject to catarrh and cold as other animals: but there is a singular difference in the sound and character of the cough of dogs under different circumstances; being indicative of different affections of the lungs, the immediate recognition of which marks the man who is accustomed to their diseases.

There is a cough, the very sound of which indicates obstruction of the air-passages or accumulation of mucus there. It comes on after the slightest exertion; it is, in a manner, incessant from morning to night: and it terminates with an apparent attempt to vomit; but nothing is ejected except a little frothy mucus, either white or discoloured with bile. The dog is usually middle-aged, if not old; in good, or perhaps too good a condition; and the cough does not seem to affect the health in the slightest degree.

Emetics will afford the most certain and the greatest relief (Recipe, No. 14, p. 322). One may be given every third or fourth day; varying from a grain of the compound powder to a grain and a half, according to the size of the dog.

Should the *asthma*, for that is the proper name of this kind of cough, not be relieved by the emetics; a cough-ball should be given morning and night on each of the intermediate days.

RECIPE (No. 19.)

Cough Balls.

TAKE—Powdered digitalis, a scruple;
Antimonial powder, two scruples;
Nitre, six drachms;
Sulphur, two drachms;
Palm-oil, three drachms.

Divide into ten or twenty balls, according to the size of the dog.

There is another kind of cough, or rather huskiness, which is the companion of distemper. This is not so loud, and sooner terminates in the attempt to vomit.

A third kind of cough is a hollow and very noisy one; occurring frequently during the day, but most of all at night. The emetics and cough-balls will be useless here; unless they are preceded by a copious bleeding; and then they will rarely fail of having effect. Bleeding is seldom indicated in either of the other kinds of cough.

CHAPTER X.

DISTEMPER.

THIS is the most fatal disease to which the dog is subject; and it is one which he seems doomed to undergo at least once in his life. An attack of it is indicated by a gradual loss of appetite, spirits, and flesh, without any peculiar local affection; by mucus collecting at the

corner of the eye; and by that husky cough to which allusion has been made in the last chapter; but which is rather an apparent attempt to get something from the throat than a true cough. Soon after this, the usual watery discharge from the nose will cease;—it will gradually thicken and stick about, or plug up the nostril, and at length become purulent or bloody. These are the general characteristics of distemper in every dog, except the greyhound; in which it is often characterized by emaciation alone.

The appetite is now generally lost; and one of three symptoms makes its appearance. Either the dog begins to purge, and the discharge rapidly increases; being first almost chalk-coloured, then olive-coloured, then mucus, and last of all, consisting of mucus and blood mingled together; or fits come on, ushered in by a peculiar champing of the lower jaw; and which, if only a second appears, bid defiance to all medical aid; or the eyes become inflamed; a film spreads over them; a small ulcer appears in the centre of the transparent cornea: it deepens and spreads; the contents of the fore-part of the eye are evacuated; and the sight seems to be irrecoverably lost.

There is scarcely a sportsman or a whipper-in who has not a supposed infallible cure for distemper; but it must be sufficiently plain that the treatment of a disease so variable in its symptoms must be regulated by those symptoms. One thing, however, should be given, whatever be the symptoms; and as the precursor of every plan of treatment; and that is, an emetic. One or two grains of the emetic powder (Recipe No. 14, p. 322) should be sprinkled on the tongue; or dissolved in a little milk, or concealed in a bit of meat.

If the cough is violent; the breathing quickened; and the muzzle hot; the dog should lose blood. The average quantity that should be taken away has been already stated at page 293. Bleeding is serviceable in this stage of the disease alone; afterwards it would be almost certain destruction to the dog.

Next the cough-balls (Recipe, No. 19, p. 335) should be given; from half a drachm to two drachms in weight, according to the size of the dog; and repeated morning, noon, and night; an emetic being repeated every third or fourth day; dependant on the degree of huskiness.

In many cases little more will need to be done; but if, when the cough abates, the dog should have become thin and weak; or if he should gradually lose flesh, the cough continuing as violently as ever, some tonic should mingle with the other medicine.

RECIPE (No. 20).

Tonic Balls.

TAKE—Gentian-root, powdered, one pound;
Camomile-flowers, ditto, half a pound;
Oak-bark, ditto, half a pound;
Ginger, ditto, four ounces;
Carbonate of iron, four drachms;
Palm-oil, one pound:

Beat them well together, and keep the mass in a closed jar for use.

Equal parts of the cough and tonic medicine will constitute the best ball for this stage of the disease; increasing the cough medicine if the affection of the chest should increase; and the tonic medicine if the strength and condition of the dog should be rapidly wasting.

When the discharge from the nose becomes purulent, and especially if it should be brown; or bloody; or

fœtid; the cough medicine must be altogether omitted, and the tonic balls alone given.

During every stage of the disease, attention should be paid to the feeding of the dog; he should be moderately fed even when the cough is at the worst; and should be coaxed to eat, or tempted with various kinds of food, when his strength declines.

A physic-ball (Recipe, No. 1, p. 294) may be given with advantage at the commencement of the distemper, if the dog is costive; and also during the state of fever; but few things are more to be dreaded than the diarrhœa that often accompanies distempter, and which nothing will arrest. The distemper purging being once established, a physic-ball will probably be too irritating; yet some effort should be made to carry off any irritating matter in the bowels. The Epsom salts will be the safest and the most effectual medicine here; and from one to four drachms may be given, according to the size of the dog; either dissolved in a little water or rolled up in tissue paper, in which form they will be less likely to occasion sickness.

The day after the administration of the salts, a course of astringent balls should be commenced.

RECIPE (No. 21).

Astringent Balls.

TAKE—Prepared chalk, two pounds;
Powdered gum arabic, half a pound;
Powdered catechu, half a pound;
Powdered oak-bark, half a pound;
Powdered ginger, four ounces;
Powdered opium, half an ounce;
Palm-oil, one pound:

Beat them well together, and keep the mass in a jar for use.

The size of the ball will depend on that of the dog, and vary from half a drachm to two drachms. It should be given morning, noon, and night; simple water being put out of the animal's reach; water in which a little whole rice has been boiled being substituted. In cases of very obstinate purging, the following injection may be thrown up:—Good thick starch or gruel, a quarter or half a pint, according to the size of the dog, with from five to ten drops of laudanum.

The method of treating the inflammation of the eye, which frequently accompanies distemper, has been already described in page 313.

Sufficient warning is usually given of the approach of distemper fits: there is not only the champing of the lower jaw, but an unwonted and insatiable appetite; the mucus all at once disappears from the eyes; and there is often a twitching of some part of the frame.

The medicine first to be administered is an emetic (Recipe, No. 14, p. 322), and a strong one, too, compared with the size of the dog. To this should follow sufficient castor-oil to open the bowels, and repeated doses of it afterwards; so as to obviate costiveness; and to this should succeed the tonic balls (Recipe, No. 20, p. 337) with a quarter of a grain of opium in each. Now, also, is the time when a seton will, if ever, be serviceable. It should be inserted by means of a proper seton-needle (never the farrier's red-hot iron), extending over the poll, and under the skin, from ear to ear. If there should be little discharge from it, the power of the seton should be increased by moistening

it occasionally with oil of turpentine, or liquid blister (Recipe, No. 25, Horse, p. 78).

At the moment of the fit do not let the poor animal be thrown into water; or a quantity of cold water be sluiced over him; it will be quite sufficient to take him by the nape of the neck with the left hand, and dash a little cold water against his muzzle from a tea-cup with the right hand, and the fit will sometimes cease.

During the whole of the disease, the dog should be kindly treated. Few persons are aware how far this will go in preventing fits, or recovering the dog from them, and effecting a cure.

If fits should degenerate into chorea, or a spasmodic action of some leg; or if this spasmodic action should follow distemper, without the intervention of fits; it is not often that the dog will recover the full use of his limbs. A seton will here also be indispensable; costiveness must be prevented by occasional doses of castor-oil; the dog must be well fed, and a course of tonic medicine must be long persisted in. The tonic balls (Recipe, No. 20, p. 337) may first be tried; should they fail, the following may be given, and usually with much success.

RECIPE (No. 22).

Tonic Pills for Chorea.

TAKE Nitrate of silver (lunar caustic), eight grains;
Ginger, powdered, a scruple;
Simple syrup, a sufficient quantity:

Divide them into sixty-four pills; give one or two, according to the size of the dog, morning and night.

If no amendment is produced in the course of three

weeks, it will be useless to pursue the treatment. There will always, however, be one guide that will not deceive the practioner:—if the dog is gaining flesh, although it should be slowly, he will ultimately get well; but if, after the appearance of chorea, he should continue regularly to lose flesh, however slow may be the progress of the emaciation, he will ultimately be lost.

CHAPTER XI.

FITS—LOCKED JAW—PALSY.

No animal is so subject to fits as the dog; and, next to distemper, they destroy a greater number of dogs than any other disease. A puppy cutting or changing his teeth is very subject to fits; and the remedy is to lance the gums and give a dose of physic. Worms will produce them; the vermin must be destroyed by the medicines that will be hereafter pointed out. Dogs that are too well fed, and have little regular exercise, will often suddenly fall into fits, if they are suffered to range at large, and are more than usually excited. The remedy is regular exercise and occasional physic. At the beginning of the season many sporting dogs have fits; and when they once appear in a kennel, almost every dog occasionally becomes affected by them.

For a dog that is subject to occasional fits there is no better medicine than the alterative balls (Recipe, No. 3, p. 300). One should be given every morning, and a physic-ball occasionally. These balls will be

particularly useful if the dog is become too fat and puffy. If fits are produced by the convulsive cough of spasmodic asthma, an emetic is indicated. In cases where the alterative balls fail the tonic will sometimes succeed; and the nitrate of silver pills, recommended under chorea, will very much diminish the tendency to epilepsy. If the fit is obstinate at any time, it will be proper to bleed; the full quantity of blood, according to the size of the dog, should be taken, and anodynes given. The syrup of white poppies is the best; and it may be administered in doses of from one to two drachms once or twice every day. If the fits are connected with costiveness, the following mixture may be given; it is the very best aperient, for general purposes, that can be administered to the dog.

RECIPE (No. 23).

Aperient Mixture.

TAKE—Castor-oil, one ounce and a half;
Syrup of buckthorn, an ounce;
Syrup of white poppies, half an ounce:

Mix them together, and keep the bottle in a cool place. The dose will vary from a tea-spoonful to a table-spoonful, according to the size of the dog.

Locked-jaw, or *tetanus*, is a very unfrequent disease in the dog, and I do not recollect a single case of recovery. The plan of treatment would be to bleed, and to give alternately, or at such times as to keep the bowels regularly open, the above aperient mixture and the syrup of white poppies.

Palsy is a frequent disease in the dog. It is too often the consequence of distemper, and then is seldom

removed. The only hope of its removal depends on the good condition of the dog, and on his retaining that condition. It is the same as in chorea; if the animal is in tolerable plight and spirits, there is a chance; if he is gradually wasting and sinking, no medical skill can arrest the progress of the disease. A seton; the keeping the bowels in a rather relaxed state; the feeding of the dog; and the exhibition of tonic medicines, will be the principal means indicated; to these may be added local applications.

RECIPE (No. 24).

Embrocation for Palsy and Rheumatism.

TAKE—Spirit of turpentine;
Hartshorn; and
Camphorated spirit; one ounce each;
Laudanum, half an ounce.

A little of this should be well rubbed in along the course of the spine, morning and night; being omitted for a few days if the part should become blistered or very sore.

In a great many cases, and particularly when palsy is the consequence of either constipation; or rheumatism; or both; these measures will fail of success; and recourse must be had to another stimulus. The hair must be cut off from the beginning of the loins to the tail, and extending half way down the thigh, on either side. A piece of thick white leather must be cut precisely to fit the part from which the hair has been clipped; and the materials for a charge (Recipe, No. 46, p. 164) having been melted and spread on the leather; it must be applied over the loins while warm as accurately as

possible. It will adhere closely to the skin; and almost without the possibility of getting it off, for three weeks or a month; and in that time its constant but mild stimulus will often recal the power of motion.

Rheumatism is also a frequent disease of the dog. It is entailed upon him by his unnatural petted state. Its most frequent immediate cause is constipation, degenerating by degrees into inflammation of the bowels. He cries when he gets up; cries when he walks; cries when he is lifted up; and frequently if he is merely looked at. The remedy is in most cases very simple, and perfectly effectual. He must first be put into a warm bath of the temperature of 96 degrees; and kept in it ten minutes or a quarter of an hour. As soon as he comes from the bath the aperient medicine must be administered in the dose of a dessert or table-spoonful, according to his size, and repeated in half doses morning and night until he is relieved. This will usually be all that is necessary; but, if complete relief is not afforded, recourse may be had to the rheumatic embrocation (Recipe, No. 24, p. 343); which should be well rubbed on the part that seems to be principally affected; and should follow the apparent shiftings of the disease from limb to limb.

CHAPTER XII.

INFLAMMATION OF THE LUNGS.

The existence of this disease is easily recognised. There is not only the cessation of the cough; the

heaving; the heat of the mouth; and the coldness of the feet; which characterize the same malady in the horse; but there is the same disinclination to lay down. The dog seats himself upon his haunches; his head elevated; his muzzle protruded; his breathing hard and quick; and his countenance anxious; yet there he sits, and will sit hour after hour, until he is so completely wearied, that his legs slip from under him; still he recovers himself; and will not fall until he falls to die. The causes which lead on to cold and inflammation of the chest in other animals will produce it in the dog; and he is often predisposed to it by the foolish nursing that is lavished upon him.

He must be bled; and to the full quantity, according to his size. To this should follow a dose of physic. The Epsom salts rolled in paper, or in solution, will be most likely to remain on his stomach, and to produce the desired effect. Then should be given the cough and fever balls (Recipe, No. 19, p. 335), made fully large when compared with his size, and repeated morning, noon, and night.

A second bleeding should take place if the inflammation is not subdued; yet some caution should be exercised here; for the dog suffers more, perhaps, than any other animal by an unnecessary loss of blood. All food should be removed, or only a little milk and water, or weak broth, allowed.

This inflammation is either originally, or it soon becomes, one of pleura; and then effusion in the chest quickly follows. For this there is seldom any cure.

CHAPTER XIII.

POISONS—WORMS.

Few animals are so exposed to the vengeance of some miscreant, or so much in the way of accidental poisoning, as the dog. The poisons usually given, or picked up by chance, are arsenic; corrosive sublimate; and nux vomica; and there is seldom any remedy. The two first are attended by excruciating colicky pains, and a discharge of blood by stool. When this last symptom appears there is no hope.

The poison of lead may be combated. Dogs are fond of licking new paint, on account of the oil which it contains; and perhaps the sweetness of the lead. They often likewise lap water that has long stood in paint-pots that have been carelessly suffered to stand about. The symptoms are, the crying and moaning of the animal; his anxious countenance; his peculiarly tucked-up and corded belly; and an excessive degree of costiveness.

The bowels must be opened; and for this purpose the sulphate of magnesia or Epsom salts should be alone used—it is in this case preferable to every other purgative; and every hour afterwards a small quantity of the following mixture should be forced upon the animal. Ten drops of sulphuric acid or vitriol should be mixed with a pint of water; and this, being made sweet so as

to be pleasant to the taste, so much as the dog can conveniently take, should be given at the time stated; and if the case be urgent in the first instance, as much as possible should be administered without loss of time. In giving the sulphuric acid and sulphate of magnesia, the object is to cause the sulphate of lead to be formed; and this, being insoluble, will not produce those symptoms to which the less resistant compounds of the metal give rise.

The dog is seldom without *worms;* but except they exist in large quantities they do little harm. There are four varieties of worms in dogs.

The first is a small worm, two or three inches long; sharpened at both ends, and of a somewhat hard structure. This is usually found in the stomach of puppies. Occasionally they are vomited; either singly, or rolled into masses. They have been found in the trachea; where they have produced a great deal of irritation and a most distressing cough; and they are very much concerned in the production of fits of young dogs.

If one of these worms is accidentally discovered, an emetic should be given; and then a physic-ball (Recipe, No. 1, p. 294).

The next kind of worm is the long round worm, resembling that in the horse. This seldom produces irritation or disease; unless it exists in great numbers.

In order to expel this worm a physic-ball should be given on every fourth morning; and on each of the intermediate days, and an hour before the dog has anything to eat, one of the following balls should be given; weighing from three-quarters of a drachm to two drachms, according to the size of the dog.

RECIPE (No. 25).

Worm Balls.

TAKE—Carbonate of iron, half an ounce;
Ethiop's mineral, one drachm;
Gentian, an ounce;
Ginger, half an ounce;
Levigated glass, an ounce;
Palm-oil, nine drachms:
Beat them well together, and keep them in a covered jar for use.

The third kind of worm is one of a singular kind. It is composed of a multitude of joints—three or four hundred—and each joint capable of becoming a perfect worm. It is sometimes three or four feet in length; and probably occupies the greater part of the length of the intestinal canal. At the upper end is a narrow neck, terminating in a small head, furnished with suckers or tentacula; by means of which the animal adheres firmly to the intestine. Even when the bowels are in a manner filled by the worms, it is singular how little inconvenience the dog suffers. The bowels may be so occupied by them that there does not seem to be comfortable room for the whole of these parasites; so joint after joint is detached, and crawls from the anus, about half an inch in length, and flat; and yet the dog may be in perfect health. It is not always, however, that the tape-worm is thus harmless to the animal. Very frequently its presence causes the belly to enlarge; the body to become thin; and the breath offensive; while the expression of the countenance is peculiar, and the appetite excessive.

It is very difficult to detach and expel this worm; for it is necessary that the whole of it should be detached; since if only the little neck and head re-

main the reptile will grow again. The spirit of turpentine is a remedy which is in these cases worthy of being depended upon. It must not be given in large doses, or it will kill the dog as surely as the worm; but a little should be made into a ball with some gum, and administered as soon as it is mixed; for otherwise the turpentine evaporates. Tonics night and morning ought also to accompany the treatment.

The last worm is the ascaris, or thread-worm, inhabiting the lower intestine. These are not, except they exist in large quantities, injurious to health; but they often tease the dog by the itching which they occasion about the anus. Medicine has comparatively little effect upon them; but the readiest way to expel them is to inject some train-oil and solution of aloes up the rectum.

CHAPTER XIV.

COLIC—INFLAMMATION OF THE BOWELS—DIARRHŒA—PROTRUSION OF THE RECTUM—PILES.

THERE is a species of *spasmodic colic* with which puppies are often attacked. The little animals are uneasy and fidgety; shifting their posture and place; hiding themselves in corners; looking at their sides, and crying as they run. It attacks them at all ages; but from one month to three they are most exposed to it. If it is neglected it is usually fatal; and examination after death shows an intussusception, or receiving of one part of the small intestines within

another. This causes an evident and insuperable obstruction to the passage of the fæces; at the same time it shows the fearful degree of painful spasm that must have taken place.

The cure for it, though by no means a certain one, is the exhibition of the aperient mixture (Recipe, No. 23, p. 342); in doses apportioned to the size of the dog, and given morning, noon, and night, until the bowels are well opened; a slightly aperient action being kept up by occasional doses afterwards. If the spasm does not soon yield to the mixture, a warm bath will often be serviceable, both in relieving the pain and preparing the bowels to act.

Inflammation of the bowels.—Inflammation of the muscular or peritoneal coat does not happen so frequently as the food and habits of the animal would lead one to suspect. One of the most frequent causes of it is costiveness. It is difficult to fix on the precise symptoms of this complaint. The dog is frequently bringing his stomach in contact with the floor, while his hind parts are elevated: he is feverish; the countenance is anxious; the belly tucked up; being hot and painful when touched; and the pulse, although small, is hard and wiry.

This disease requires bleeding; a warm bath; the aperient mixture, and low diet. The aperient mixture will be of far more service than any combination of aloes and calomel, or any other drastic purgative.

Of the varieties of *diarrhœa* that of *distemper* is the most to be dreaded, and too frequently bids defiance to all medicine. This has been treated of under *distemper*.

Next in obstinacy and serious consequences is bilious diarrhœa. The dog is even more subject to an increased secretion of bile than is the human being; and, on account of its stimulating and acrid character, inflammation of the mucous coat of the intestines is speedily produced. It is usually preceded and often accompanied by obstinate sickness. A great quantity of bile mingles with the fæces; the stools are in a manner composed of bile; they are evacuated with a great deal of pain; there is rapid prostration of strength; and the dog soon sinks under the disease.

The treatment of bilious inflammation and purging is often difficult. The aperient mixture (Recipe, No. 23, p. 342) is first indicated; unless the purging is very profuse and blood mingles with the fæces; and in every case of this kind the syrup of buckthorn must be omitted. As soon as the purging is a little restrained, that which will act on the cause of the disturbance of the bowels must be given.

RECIPE (No. 26).

Powder for Bilious Inflammation.

TAKE—Calomel, eight grains;
Antimonial powder, four grains;
Powdered opium, two grains.
Mix together, and divide into eight powders.

Give one or two of these, according to the size of the dog, morning, noon, and night.

One of the most distressing circumstances attending this disease is an incessant vomiting. A little boiled milk, with one drop of landanum in it, will sometimes quiet the stomach; but if that fails, it is not often that

anything else will succeed. The following ball may, however, be tried :—

RECIPE (No. 27).

Ball for Incessant Vomiting.

TAKE—Powdered chalk, one ounce;
Powdered colombo-root, half an ounce.

Make into a mass with a thick syrup of poppies; and give from half a drachm to a drachm, according to the size of the dog, two or three times in the day.

Petted dogs are very subject to *piles;* produced by the stimulating nature of their food, and the costiveness to which they are subject. The dog frequently licks his anus; or drags it along the carpet; there is considerable swelling and tenderness of the part; a little matter often oozes out when it is pressed upon; and blood *follows*, but does not mingles with, the stools.

Present costiveness must be removed by the castor-oil mixture; a little sweet oil or pomatum should be smeared over the part; or introduced up the anus with the tip of the little finger; and an alterative ball (Recipe, No. 3, p. 300) given every morning.

A considerable tumour sometimes arises by the side of the anus; it is to be attributed to the same causes. It is exceedingly painful—swells to a very considerable size—is at first of an intense red colour; but becomes dark and purple; till at length, breaks, and discharges a great quantity of thick bloody pus; leaving a large and deep ulcer. The tumour is a species of carbuncle. The ulcer will readily heal, if the bowels are kept open by means of the aperient mixture (Recipe, No. 23, p. 342); and the astringent lotion (Recipe, No. 17, p. 329) is applied to the wound.

Very great attention should afterwards be paid to the feeding of the dog, and the proper state of the bowels. The alterative balls (Recipe, No. 3, p. 300) will be useful; and an occasional meal of boiled bullock's liver, should be allowed; otherwise the tumour will return, and, at length, degenerate into an ulcer of a cancerous nature; which will spread, corrode, and destroy the dog.

To this chapter belongs an accident which occasionally happens to young dogs that are delicate and subject to frequent purging; viz., *protrusion of the rectum*. The part should be cleaned with warm water, and then returned as gently as possible. The purging should be stopped by means of the aperient mixture, without the syrup of buckthorn; if there is much tenesmus, a little of the same mixture, combined with gruel, should be administered as an injection; the anus should be afterwards frequently bathed with cold water, and proper means taken to strengthen the constitution of the dog.

CHAPTER XV.

DISEASES OF THE GENERATIVE ORGANS.

The glans of the penis of the dog, and especially of the young dog, sometimes enlarges; the prepuce contracts beneath it, and this can no longer be brought over and made to cover it. The glans becomes of a pale red colour, glossy, and is evidently distended by a fluid. It must be punctured with a fine lancet, and

the enlargement will speedily subside. It should then be examined whether any of the hairs at the edge of the prepuce had insinuated themselves into the sheath; for these must be cut off with a pair of scissors.

There is sometimes a discharge, or oozing of blood, from the prepuce. This rarely or never proceeds from the urethra; but when the sheath is turned down, a cauliflower-like *fungoid growth* is perceived, from which the blood flows on the slightest touch. If there is no great quantity of it, and the whole can be easily got at, there is a very fair prospect of a cure. It must be cut off closely with a pair of sharp scissors; and the roots touched with the lunar caustic. A second, or even a third, repetition of the paring of the fungus, and the application of the caustic, will not unfrequently be necessary.

If, however, the sheath seems to be in a manner filled with it; if the whole of it cannot be fairly exposed; humanity will require that the poor animal should be destroyed.

Castration is best performed on the dog by means of a ligature. An incision is made into the scrotum; the testicle turned out, and a tight ligature passed round the cord; after which the testicle is immediately removed.

The scrotum itself is subject to disease;—there is enlargement of the bag generally; a very great redness of the integument; and the appearance of a superficial pimpled sore. Fomentation with warm water, and the application of the healing ointment (Recipe, No. 5, p. 302), will usually effect a cure.

If this is neglected, that which, in the first place,

was only inflammation of the integument, will spread to the testicles; chirrous enlargement and even cancer of it will be produced. Little hope of doing good can then be entertained, although in a few instances the Friar's balsam, and the healing ointment have effected a cure. The iodine pills (Recipe, No. 15, p. 325) will be worth trying; if the owner is determined that a cure shall be attempted. In most cases, however, the patient should be put out of his misery as speedily as possible.

Castration will not always succeed in schirrous enlargement and cancer of the testicle: the disease will spread up the cord, when that has begun to enlarge; and, in some cases, when there is no apparent hardening or thickening of the cord, the cancerous tendency will remain.

The fungoid excrescences already described are sometimes found in the vagina of the bitch; being generally produced either by difficult parturition; or the forcible separation of the dog from her at the time of heat. If these growths can be got at, a cure may be attempted; but if they are beyond the reach of the scissors or the caustic, no good can be done. These fungoid growths, either from ineffectual attempts to get rid of them; or in their natural progress, terminate in cancer of the vagina; and injuries either at parturition; or the period of œstrum, are sometimes productive of the same consequence. It will be useless to attempt to cure cancer in the vagina.

CHAPTER XVI.

PARTURITION.

The bitch goes with young nine weeks. It is seldom before the fifth week that the belly begins to enlarge; or that the motions of the fœtus can be detected. A day or two before the expiration of her time of utero-gestation, she usually gets fidgety and uneasy; she selects her bed; and for some days before that the secretion of milk has commenced. If she has not been petted, and disposed to inflammation; or if the dog was not much larger than herself; there is little or no danger attending the act of parturition.

Petted bitches, however, frequently experience much difficulty in bringing forth their young, and manual assistance is then necessary. The precise time at which the connexion took place should be ascertained; and no attempt made to extract the fœtus, until some hours after the full expiration of the usual period of utero-gestation; nor for the first six or eight hours after the labour has commenced, should the bitch be worried by any attempts at examination or assistance.

When, however, it is deemed expedient to interfere, the first thing that should be done is to examine whether any part of the fœtus has entered the pelvis; if it has not, she must be left undisturbed for a few hours longer. If it appears, after a second examination, that no progress has been made, a stimulant should be given; and

the best stimulus to the womb, and that which has saved the lives of hundreds of these animals, is the *Secale cornutum*, or ergot of rye.

RECIPE (No. 28).

Ergot of Rye Mixture.

TAKE—Ergot of rye, a scruple; pour on it
Boiling water, one ounce;
Let it infuse for twenty minutes; then add,
Brandy, half an ounce;
Sugar, two or three lumps.

A very large dog may take the half of the above at once; and the remaining portion may be given twenty minutes afterwards, if the first dose produces no decided effect. For a very small dog, from one to two teaspoonfuls will be sufficient; it will usually rouse the womb to more forcible contraction, and often recall the labour-pains after they had ceased.

As soon as the fœtus is in the pelvic cavity, and a little portion of it presents from the external orifice; the finger, previously oiled, should be introduced into the vagina, by the side of the puppy; most especial care being taken that the young one is not forced back. The position of the fœtus will now be ascertained. If it is a natural presentation, the muzzle being foremost; the fœtus may be a little advanced, by gentle solicitation, and working of the finger. The finger must then be carried as far up as possible, and one of the shoulders of the pup felt for; and the elbow being found, that foreleg may be easily brought down. The other must be disposed of in the same manner; and then, by gentle but firm pulling, the whole fœtus will be extracted. It

will never be prudent to use any force until the fore-legs are thus disposed of; for there will be hazard of breaking the puppy; and, that being done, the life of the mother is irrecoverably lost.

If the hinder legs present, there will be somewhat more difficulty. The puppy must be partly drawn; but more solicited forward by the action of the forefinger, in the manner I have described, until the chest is in the passage. The fœtus then being firmly held; a finger must be introduced; the shoulder and the elbow, on one side, be sought for, as recommended before; and that forefoot brought forward. The other must be managed in the same way; and then the head will give little trouble.

Instruments should never be resorted to until the strength of the bitch is evidently exhausted; till the throes have ceased, and she can no longer assist the surgeon; then a hook, resembling a button-hook, but with the extremity not curved round, must be taken; and the forefinger of the left hand having been introduced into the vagina, the hook is slid along it, completely guarded by it; and introduced into the mouth of the fœtus, in a case of natural presentation; and into the pelvic cavity if the presentation is not natural; and being gently, but somewhat firmly, pulled, while the fore-finger of the left hand is still urging the fœtus forward, it may often be extracted.

Soothing and gentle treatment will avail more here than any force that could be used.

Inversion of the womb sometimes takes place, when too great force has been used. If it is immediately and carefully returned, there will be little danger; but, if

considerable straining should continue after the womb is returned, a bandage must be contrived to press upon the external orifice; a little cold water having been previously injected into the womb.

After the bitch has pupped, she should be left as much as possible to herself; for she will then be far more likely to do well than when disturbed by the kindest nursing. She may be suffered to eat and drink as usual; for it is rare that, even in petted bitches, any fever ensues, except from two causes.

If her young ones, or all except one, are cruelly taken from her; because there may perchance be a stain in their pedigree, nature will continue to secrete milk enough for the whole litter; and this will accumulate in her teats and cause local swelling and inflammation; it will likewise be a frequent source of general fever, that cannot easily be subdued.

Physic, the cough balls (Recipe, No. 19, p. 335), little food, and frequent fomentations with warm water, will be most likely to afford relief.

Sometimes, however, a contrary course is pursued. The owner sets great value on the breed, and is anxious to save every puppy; then, instead of finding out a foster-mother for some of them, he suffers the whole litter to suck and exhaust her. A bitch that is used to hardship, and whose constitution has not been impaired by foolish fondness, will not be hurt by this; but a spoiled and petted bitch is rarely capable of suckling with safety more than half of her produce.

If too many remain with her, she, after awhile, becomes somewhat stupid; is inattentive to her young ones; she rapidly loses flesh; she will not eat; she has a wild yet sunken look: when all at once she will

lay herself down, and begin to pant dreadfully, as if she was about to die in a few minutes; or strong yelping fits come upon her.

This is the consequence of extreme irritability, produced by exhaustion and debility; thus every thing that would tend to weaken the bitch would increase that irritability, and aggravate every symptom. It would, therefore, be bad practice to bleed her. The best allayer of irritability in this case will be a stimulant; a little wine or even spirit and water will be of service; and, if after that half her puppies are taken from her, she will generally do very well.

Sometimes a bilious diarrhœa will come on from the same cause. The same means must be pursued; with this difference, that a dose of the aperient mixture (Recipe, No. 23, p. 342) must be given, and followed by the astringent balls (Recipe, No. 21, p. 338.)

CHAPTER XVII.

DISEASES OF THE SKIN.

THERE is scarcely a keeper, or a whipper-in, who has not an infallible specific for the mange; and one or two applications are to perform a complete cure. I know nothing of these wonderful ointments or lotions; and if I did I would not use them; because I should be sure that so sudden a revulsion from the skin would be very likely to produce other and worse diseases.

If the mange, whether red mange or that of the common scabby kind, is derived from either of the parents, no power on earth will cure it; nor can the

periodical mange, which has returned in the spring and the autumn for a few years, be ever eradicated from the blood. Mange caught on ship-board, and where the dog has had much salted meat, is very obstinate. The red mange, also, is difficult to cure; but patience and perseverance may conquer that.

Itching, although it may exist to a considerable degree, and even with some redness of the skin, will sometimes yield to medicine with a little starvation. A physic-ball (Recipe, No. 1, p. 294) should be given every fourth day, and an alterative ball (Recipe, No. 3, p. 300) on each of the intermediate days.

If, however, a week should pass; and the itchiness and redness continue, the mange ointment (Recipe, No. 2, p. 299) must be resorted to. The hair must be carefully parted, and a little of the ointment gently but well rubbed into the skin, wherever the disease appears. This should be continued daily for a week, the physic and alterative balls being given as before. At the expiration of a week the dog may be washed; in order to ascertain the progress of the cure, and to open the pores of the skin, for the better effect of the ointment. The proof of cure will be the cleansing away of all the scabs; the wholesome and natural appearance of the skin; and the cessation of the itching. The medicine should be continued at least a week after the mange has seemed to disappear.

In red mange there is seldom any scabbiness, but intense redness with heat, and itchiness of the skin on various parts; more particularly on the belly; the flanks; and the inside of the thighs. Here, also, the physic and the application of the ointment should be preceded by

bleeding. The same medicine must be given; and one-eighth part of mercurial ointment added to the common mange ointment. Care must be taken that the dog does not lick it off; for if he does he will soon become salivated; and, in order to prevent this, if he will not otherwise let it alone, a little powdered aloes should be mixed with the ointment.

Should little or no progress be made after a month's trial has been given to this treatment, the following lotion may be used.

RECIPE (No. 29).

Wash for Red Mange.

TAKE Corrosive sublimate, a scruple; dissolve it in
Spirits of wine, two drachms; add
Milk of sulphur, an ounce; and gradually pour upon this, well stirring the whole together,
Lime-water, half a pint.

This may be applied to, or rubbed on, the affected part by means of a bit of sponge or clean rag, the liquid being kept well stirred. There is little or no danger of salivation from the use of this wash, unless it is used in great quantities; or be continued very long.

If the disease should still be obstinate, local applications may be altogether omitted; and the following alterative powder given daily:—

RECIPE (No. 30).

Alterative Medicine for Red Mange.

TAKE—Ethiop's mineral, from two to five grains, according to the size of the dog;
Cream of tartar, from four to ten grains; and
Tartrate of iron, from one to three grains:
Rub them well together.

I have known some sportsmen continue to give this for five or six weeks, and at length succeed; but even this will sometimes fail. Should purging, or any other untoward symptoms, occur at any period, the medicine should be discontinued for a week; and then given again as before.

I have said nothing of tobacco-water, hellebore, or the tan-pit; they are "kill or cure" things, and better let alone.

A very peculiar species of mange will sometimes appear. A dog is perfectly well to-day, and his skin everywhere whole and sound; to-morrow a bare raw patch is found upon him, usually about his haunches, varying from the size of a shilling to that of the palm of the hand. It is exceedingly sore; it seems, from the dog's manner, to itch dreadfully; a thin ichorous fluid exudes from it, and it spreads rapidly. Practitioners call it, from its sudden appearance and inflammatory character, "the acute mange."

It has a frightful appearance; but it readily yields to treatment. A dose of physic should be given, and the healing ointment (Recipe, No. 5, p. 302) gently smeared over the sore; and very frequently, in three or four days, the whole will disappear.

Mange will frequently attack *the feet* of dogs. It usually appears, at least in its early stage, in the form of inflammation of the web between the toes, which becomes intensely red; an ichorous fluid exudes from it; and the dog is very lame. The wash for red mange will be the best application; but the foot should be bound up. The arm of a lady's worn-out glove will be most conveniently used for this purpose.

Sore feet, partly arising from this affection, but more from working over rough or stubble ground, is best cured by a strong solution of common salt, to which a little tincture of myrrh has been added.

When either *sore feet* or mange in the feet is neglected, the disease spreads to the toes, more particularly to the roots of the nails; the nail being sometimes lost, and the dog for awhile rendered useless. All broken nails should be cut; and all that are loosened should be pulled out; poultices of linseed-meal should then be applied to abate inflammation; after that, the feet should be frequently bathed with the astringent lotion for wounds (Recipe, No. 17, p. 329), diluted with an equal quantity of water, a little tincture of aloes being mixed with it.

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